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GEOGRAPHY EDUCATION

HEARING

BEFORE THE

SUBCOMMITTEE ON
EDUCATION, ARTS AND HUMANITIES

OF THE

COMMITTEE ON
LABOR AND HUMAN RESOURCES
UNITED STATES SENATE

ONE HUNDREDTH CONGRESS

FIRST SESSION

ON

EXAMINING THE ISSUE OF GEOGRAPHY EDUCATION IN OUR SCHOOLS TO GET A BETTER UNDERSTANDING OF WHAT NEEDS TO BE DONE TO IMPROVE STUDENTS' KNOWLEDGE ABOUT THE WORLD

OCTOBER 29, 1987

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GEOGRAPHY EDUCATION

THURSDAY, OCTOBER 29, 1987

U.S. SENATE,
SUBCOMMITTEE ON EDUCATION, ARTS AND HUMANITIES,
COMMITTEE ON LABOR AND HUMAN RESOURCES,
Washington, DC.

The subcommittee met, pursuant to notice, at 10:05 a.m., at the National Geographic Society, 17th and M Streets, NW., Senator Robert T. Stafford presiding.

Present: Senators Pell and Stafford.

Also present: Senator Bradley.

OPENING STATEMENT OF SENATOR STAFFORD

Senator STAFFORD. Good morning, ladies and gentlemen.

Our original schedule for witnesses has been changed a bit by reason of a vote in the Senate at 10:00 o'clock. The Senator from Vermont had arranged his affairs to be able to vote at 9:30 but the Senate decided to vote at 10:00 o'clock instead, and as a result, my principal co-sponsor in the resolution that had led to this hearing—Senator Bradley of New Jersey—will be here as soon as he can following the vote, and Senator Pell will be delayed and arrive here, for the same reason.

Senator Pell is actually the Chairman of this Subcommittee on Education, Arts and Humanities. He and I have shared the Committee for the last 15 or 16 years.

Welcome to this hearing, and I am very pleased to be here today as the Subcommittee on Education, Arts and Humanities convenes to explore the issue of geography education in our schools.

I am honored to chair a hearing with such a distinguished array of witnesses. Their presence is an indication of how seriously we must treat the pressing need in our country to increase geography literacy among our young people.

While this hearing cannot remedy the problem at hand, I am hopeful that our efforts today will provide a better understanding of what needs to be done to improve students' knowledge about the world.

On July 24 of this year, the President signed into law a resolution designating November 15-21, 1987 as "Geography Awareness Week."

As a principal cosponsor of this resolution in the Senate, I am particularly pleased that the Subcommittee could hold a hearing so close in time to this symbolic week.

I want to thank Mr. Grosvenor, and all of the people here at National Geographic, who have helped to plan and prepare for this field hearing. The National Geographic Society has been a leader in the field of geography education, offering teacher education programs, piloting high school programs, and supplying resources to classrooms around the nation.

The Subcommittee is grateful for the accommodations they have provided us today.

Recently, a United Nations study of 30,000 10- and 14-year-olds in nine countries ranked American students next-to-last in their comprehension of foreign cultures. In the future, this general lack of knowledge of basic geography could place the United States at a disadvantage with other countries in business and political affairs, and even environmental awareness.

Clearly, our school children know too little about the world around them. Our high school and college graduates must be prepared to compete in a world where global perspective is essential.

Teaching students about the world and making them geographically literate will enhance America's competitive economic position and our nation's social prosperity.

Of particular concern to me is the conclusion of the National Endowment of the Humanities report, "American Memory," which states that too much focus on practical education in our schools is driving traditional offerings, like ancient history, out of the curriculum.

With this in mind, it is no wonder that in May of this year, the Study Commission on Global Education reported that America's school-children are lacking in knowledge about the culture, history and geography of other nations.

Our nation's schools must begin to stress this teaching of knowledge as well as skills. This Senator believes that geography awareness must be taught in our schools. Such knowledge will foster students' respect for the environment, their interest in the way people live in other countries, and even how weather and time can effect the world around them.

Geography literacy can give students a valuable perspective as they learn about people and events in history. When our world is made to seem increasingly smaller due to rapid communications, satellites, and the like, it becomes increasingly important that all of our people know basic geography.

I hope that the hearing today will shed some light on how we can help meet this challenge in classrooms across the country.

We will insert Senator Pell's opening statement into the record.

OPENING STATEMENT OF SENATOR CLAIBORNE PELL

Senator Pell. This hearing of the Subcommittee on Education, Arts and Humanities will come to order.

At the outset, I want to thank Senator Stafford, for it was he who suggested the idea of this excellent hearing. I would also like to welcome our distinguished list of witnesses, which includes Senator Bradley, former Chief Justice Warren Burger, the Secretary of Education, Admiral Bobby Inman, the former Chief of the CIA, and Mr. Gilbert Grosvenor, the President of the National Geographic Society and our host for today's hearing. Their presence here this morning points out clearly the critical importance of this hearing.

In recent years there has been a great deal of attention focused upon the math, science and foreign language deficiencies of our nation's young people. Unfortunately, equal attention has not been focused on the deficiencies of Americans with respect to knowledge of geography. The sad fact, however, it that these deficiencies are considerable. For instance:

Nearly 50 percent of all students cannot locate Japan on a map.

A study of college students in 1984 found that 80 percent could not name Rhode Island and Delaware as the nation's two smallest states, and fewer than half could name Texas and Alaska as the largest.

Sixty-three percent of all Americans participating in a nationwide survey could not name the two nations involved in the SALT talks. These are discouraging anecdotes, but they substantiate beyond any doubt the need for today's hearing.

Before we begin, however, I want to announce that Senator Stafford, Senator Bradley, and I are joining together to offer an important amendment to the legislation providing for a White House Conference on Libraries. That legislation is now pending on the Senate floor and when the Senate takes up formal consideration, we will offer an amendment to provide an additional $3 million authorization for education programs conducted through the Commission to celebrate the Bicentennial of the Constitution. That amendment would be earmarked to provide teacher training and retraining in history and geography. It is a measure originally suggested to us by Chief Justice Burger, and it is something that we believe will receive strong and favorable support by our Senate colleagues.

With that as a backdrop, let us begin this morning's important work.

Senator STAFFORD. Our first witness this morning, in view of the slightly restructured witness list, will be Admiral Inman, who is currently Chairman and Chief Executive Officer, Westmark Systems, Inc. of Austin, Texas. I believe Admiral, you will talk about geography in part from the perspective of serving as Deputy Director of CIA. Am I correct in that?

Admiral INMAN. Yes, Senator.

Senator STAFFORD. We welcome you here this morning and appreciate your coming.

Admiral Inman.

STATEMENT OF ADM. BOBBY RAY INMAN, CHAIRMAN AND CHIEF EXECUTIVE OFFICER, WESTMARK SYSTEMS, INC., AUSTIN, TX

Admiral INMAN. Thanks, Senator Stafford. When one looks back on the nation's history, from founding through to 1941, there was a strong strain of isolationism. We would occasionally move away from it but it would almost always come back. Almost a sense that if we knew too much about the outside world we would get involved.

Yet the study of geography was a fundamental part of education during much of that time. We were drawn into a global conflict in World War II, and at the end of it we had by far the strongest economy left in the world, and we assumed, for the first time, the role as the major leader of the free world.

We have continued that role, blessed by an economy that has sustained our commitments around the world, yet, throughout those succeeding years we steadily have neglected the very education that is essential to understanding that outside world, and it has deteriorated, steadily.

In the real world of the 1980's we worry about Superpower confrontation, the two military Superpowers—the United States and the Soviet Union—and increasingly about economic Superpower confrontation—the U.S. and Japan. But it is a much, much more complex world than simply Superpower confrontations.

The regional military conflicts pose the greatest threat, in my view, to the growth of hostilities around the world. The growing threat of terrorism—its base being obscure, its place as a refuge being obscure. Increasingly, our economic partners are changing. Western Europe made up the bulk of our international trade as late as the early 1960's.

International trade was a small part of our economy. Less than 3 percent of our Gross National Product was based on international trade as late as 1960. By the end of 1986, 12 percent of the Gross National Product from international trade, is now the statistic.

1960. No major sector of the U.S. economy had more than 10 percent of its revenues from international trade. Again, by the end of 1986, 25 percent of the revenues of a major industrial sector coming from international trade is no longer unusual.

Yet we understand, as a nation, far too little about the economies of the countries where we want to market, and from which we draw both raw materials and new finished products, particularly the newly emerging countries.

When I was an undergraduate in the late 1940's, one of my learned professors held forth that we had been fortunate to get 20 years between World War I and World War II. In his judgment, we would be even luckier if we got ten years between World War II and World War III. As you know well, we are celebrating more than 40 years now without a global conflict.

We have had regional wars. We have been drawn into a couple of them. But in fact I am persuaded that the alliances that we strung together in the late 1940's, early 1950's, have been the key to a long period of global stability.

Those alliances are now under great strain because of the economic competition. How we understand those countries, their own internal problems, and their opportunities, ultimately, may be the single-most important factor in how we keep those alliances together for another 40 years, and ensure that in fact we do have global stability.

As a functioning member of the U.S. intelligence community for 22 years of my 31 years of Government service, I found that there were wonderful advances in technology. The ability to observe parts of the world that were denied. To have a rapid flow of information made possible by the revolution in computers and telecommunications.

But what they do not do is give you instant context. What is the significance of events you follow, or as a conflict arises, and you're asked to provide protection for international shipping?

What are the shoals in the waters that are going to force you to go close to potentially hostile terrain? The kind of essential information that must be at the fingertips of those who shape policy and those who make decisions.

I am persuaded, now, from these five years of looking at the private sector, that the demands are every bit as great for those in the private sector who are going to manage this nation's economy.

We have had brought home to us, painfully, the last two weeks, that the financial markets are now entirely international. The speed with which events can move says that we must have equal ability to absorb, to understand, to know the role that geography as well as time and distance play in this challenging world ahead of us.

There are many great opportunities that lie out there for growing new elements of the economy. Reality is that the standard of living is slipping in this country. We have created an aggregate of 8.8 million new jobs in the last five years.

But 10.4 million of those, in what we call the service industry, have an average weekly raise of $272.00. In the same timeframe we lost 1.2 million jobs in manufacturing, and 400,000 in mining, and the average weekly wage of those jobs lost was $444.00.

So we are already beginning to see a slip in U.S. standard of living obscured by the reality that two adults work in many families, where we are fortunate to have two adults in the family. My conclusion: education is the front line for our success in sustaining a standard of living, in getting up productivity, in being able to compete effectively in that international marketplace, and in keeping a stable and peaceful world.

And if we cannot upgrade the quality of education, and the broad understanding of all our citizens of what that world really looks like, and how we must interact with it, then we are doomed for a continued slide. If we reverse it, then the prospects are for another 40 years of prosperity and peace. Thank you very much.

Senator STAFFORD. Admiral, thank you very much. One question, and you might like to reflect on it before you answer, and you could tell us later, or do it now, as you wish.

How could we provide incentives—if we can—at the Federal level, to encourage business to become more deeply involved in geography in our schools?

Admiral INMAN. In my five years, now, of roaming, looking at my own country, after 31 years of looking at the outside world, I am persuaded that industry responds to stimulus to incentives. I wish they got out and led more often without those, and, a few companies do. I think the reality is that it is the stimulus, it is the incentive that causes them to respond.

Clearly, tax incentives are a demonstrated way of doing it, but my own sense is that we are not doing as much as we could in leveraging from the Federal side. We tend to make grants. If we looked for matching grants, as an approach, and tried to pull in matching private grants to match what comes from Federal and/or State level, and then give some tax credit. And my sense is you do not have to give it all back, but as long as there is a little incentive, that is enough to draw the attention, and produce the argument that already ought to go on its merits but does not.

Senator **Stafford**. Well, we certainly are grateful to you, Admiral, for joining us this morning, and appreciate it very much.

Admiral **Inman**. It is a pleasure to be here. Thank you.

Senator **Stafford**. The Committee's next witness hardly needs an introduction from the Senator from Vermont. It is former Chief Justice of the United States Supreme Court, and Mr. Chief Justice, we welcome you here very much indeed. We are honored that you have come to join us.

STATEMENT OF HON. WARREN E. BURGER, FORMER CHIEF JUSTICE, U.S. SUPREME COURT, WASHINGTON, DC, AND CHAIRMAN, COMMISSION ON THE BICENTENNIAL OF THE U.S. CONSTITUTION, WASHINGTON, DC

Mr. **Burger**. Thank you, Senator.

I have been concerned about the problems that Admiral Inman has just so effectively presented. That, particularly, in my function as Chairman of the National Commission on the Bicentennial of the Constitution, in that process, beginning two years ago, began with a search for what the American people knew about the Constitution, much as has been done by National Geographic, and others, on what the American people—and particularly young people—knew about geography.

And my view quickly took shape. Geography and history are so closely related, they cannot be separated and logically, they should not be separated. At first I had said in informal discussions in our staff, and with other members of the Commission, that history and geography are Siamese twins.

That was not very good because we know that Siamese twins sometimes have been effectively separated and survive. It is more a sense of geopolitics, that I think I would approach a discussion of this kind of a problem.

We had studies made of our own, but then we drew on professional studies like the survey made by the Hearst Corporation which was one of the best, and the results—and I am sure most of you have seen some of them—were nothing less than appalling.

Only a fraction of the students, even at high-school level, and many adults included, could not identify the author of the "Gettysburg Address." They could not place the Civil War in anywhere near the proper timeframe.

In one of the annotations of some of these studies, we found that young people in Georgia could identify some segments of the Civil War because they had grown up having heard about Sherman's march to the sea.

As I indicated to you, Senator, I did not come with any prepared statement, but I have been steeped in our problem on the Bicentennial of the Constitution, and how to tell this story of the Constitution for many, many months now.

And one of the most effective things that I think we did was to have a high-school essay contest on the separation of powers. At first, a Subcommittee of the Commission studying it recommended that we have a question to the students of "What the Constitution Means to Me." After we analyzed that, we concluded that that would not really reach what we were trying to do, and so we made it more concrete, on meaning of the "Separation of Powers?"

Thirteen thousand young high-school people, juniors and seniors, even a few sophomores, entered that contest, and, to make the point that Admiral Inman has just made, this was a joint enterprise between Gannett newspapers and "USA Today," and our Commission. By "a joint enterprise," I mean to say they put up all the money, and they furnished great leadership in reaching the students.

They were very innovative about it, and the teachers that we have met with over the past year, or more, have been simply elated about the consequence of this essay contest, this being just one of many projects, one of many programs.

Now Secretary Bennett has been making points on the inadequacy of our education, and everything that we looked at bears out what he has been saying, and convinced us that we must focus on high schools and primary schools, and colleges for the next four years of the Bicentennial programs.

On that score we would like to see geography and history put together, or, to put it maybe more accurately—they should not be separated.

If you do not understand geography, you cannot—students, I am speaking of—cannot possibly understand history and the impact of events on geography.

I can remember, as a small boy in school, when we had to redraw the map of Europe after—this was after World War I, and Czechoslovakia came into being, and now, after World War II we have the satellites of the Soviet Union with borders changing.

And again, to go back to the studies, or the efforts we made to find out the quotient of information of students, and of adults, it was nothing less than appalling, how little they knew. And so one proposal—and I will not dwell on it long here, because it is not the purpose of your hearing, Senator—we are hoping to sponsor, if we can get the proper cooperation of others, a contest of high-school students on a pictorial map.

And if I may turn to the map that we have right back of us here on the right, I will try to illustrate what I mean. There would have to be a very careful description for the students as to what we want them to do. I would start it with perhaps something in the area of Philadelphia, or perhaps even earlier, at Boston, with the students drawing a picture of the Boston tea party, and perhaps the battle of Breed's Hill.

And then come down to Philadelphia, something on the Declaration of Independence. Parenthetically, the surveys, the Hearst survey particularly, showed that the state-of-mind of students in this country was that they could not tell the difference between the Declaration of Independence and the Constitution, and one of the most appalling things was that when there was quoted to them that language, "from each according to his talents and abilities, and to each according to his needs," the question was where did that come from, and an enormous number of students said, "From the Constitution of the United States."

Of course it does come from a constitution of sorts, but it was a constitution written by Karl Marx, and forms the basis, or at least the ostensible basis—not the real basis—of the whole communist system.

If they applied it faithfully and literally, the free world would have less quarrel with it because it would be a statement, perhaps, more nearly of socialism than of communism.

Now to go back to what I hope we will develop—and I think we can get the fiscal support for it, and the cooperation of educators—that map of the students would move down—from where I digressed—to something off of Yorktown, and perhaps the boys and girls would draw some sailing ships out off the coast of Virginia, where Admiral de Graff's fleet was preventing the British from getting their supplies to their troops, which in turn led to the surrender of Cornwallis at Yorktown.

And perhaps just a few more illustrations might be of interest. That map should show what was the Louisiana Territory, with its enormous impact on the history and the development of this country.

With a foreign power in control of the outlet of the Mississippi into the Gulf of Mexico, meant that all river transportation was going to be beyond the reach of the United States.

And then the Northwest Territory, again terribly important, because we remember that in the middle of the Constitutional Convention, when it was clear that the delegates at Philadelphia were not going to be able to resolve the evil problem of slavery, the Continental Congress sitting up in New York enacted the Northwest Ordinance forbidding any extension of slavery into that Northwest Territory.

Again, in the surveys, the students—there was almost no awareness of what the Northwest Ordinance was, and its relationship to the Constitutional Convention, its relationship to the evil institution of slavery, and then, how far West we would go.

We remember that that whole West, from Oregon, down to the present Mexican border, was controlled by Spain, and we did not acquire it until some time later, after the Mexican War.

I have a feeling that if we can link geography and history, we can turn around the corner of—I do not know how many generations of American children growing up, many of whom are now teachers of the present generation of students, who simply do not know about these things.

I have spent some time in Europe over the years. We have not used the term geopolitics much in this country. I never heard of it when I was in school. Students in the European countries have that from the beginning.

I can recall incidents, over the years, when some question would come up about when was the date of the St. James Bible, when was the printing press invented, when was the Battle of Hastings, when was the Magna Carta, not signed but sealed, at Runymede? Those dates were right in front of my mind as a result of linking geography and history.

That was not because I was a bright student. It was because I had once entered a map, a pictorial map, with the map of England, and several dozen events, illustrated with a picture, and those dates and those events were embedded in my mind.

And of course at the time I was doing it, the significance of it did not register fully with me. But when someone said that the Northwest Ordinance was adopted in a certain year on a certain date, having done something like that with the Northwest Ordinance on another occasion as a student, I said no, it was on July 17th of 1787 while the delegates were sitting in Philadelphia.

If we could have a generation of students who would relate that map—and not just the United States, but starting with that—relate that map to the events that created that country of ours, from a string of 13 colonies on the edge of a wilderness into a great world power in about 120 years, from the time of the Constitution to the time of World War I, I think we would have contributed to both the objectives that Gil Grosvenor and the entire National Geographic organization are concerned about—that is, geography—with the events that make geography important.

Now having not come adequately prepared, Senator, I am not sure how much cross-examination I can withstand, but I will try.

Senator STAFFORD. Well, Mr. Chief Justice, we are very grateful to you for coming here and for making the excellent suggestions. It is not very often that the former Attorney General of a State has a chance to cross-examine the Chief Justice, and I am not sure this is the time for me to do it. [Laughter.]

I did want to point out, that during the years that either Senator Pell or myself have chaired the Subcommittee on Education, that it does have jurisdiction for the Senate over all of the educational programs in which the Federal Government participates.

In fact, we pride ourselves on doing the work of three Subcommittees from the House of Representatives. So you are talking to the right people as far as the Committee is concerned, and I am sure that the Secretary of Education has been listening carefully to what you have said as well. We very much appreciate your being here.

Mr. BURGER. Let me add just one thing, Senator. We have known it, all of us, since we learned to speak and read, that famous Chinese aphorism, that one picture is worth ten thousand words. I think we must reach the young people in the way that they will respond, and they do respond to pictures, and the pictures can clothe the ideas, and the historical facts.

And I am sure we can do this, Senator, in the period of great deficits, without calling on Congress to finance it. I have discussed this general subject with a number of people in the private sector, and I am confident that the funds—and it will take substantial funds to do this, to reach every school in the United States, every high school at least—I am confident that we can secure that money from the private sector, very largely, and we would relate it to what we are doing under our appropriation from the Congress, which is the conduct of seminars which in effect are to teach the teachers.

In the first year, your appropriation for us was $1 million for the conduct of such seminars, and we had applications for grants for ten million, and were only able to grant one-tenth of them. We are hoping for, and I think reasonably assured, that we will have that multiplied by three, for 1988 and 1989, and I am delighted to find out that over the last year, and year and a half, I have attended teachers' conventions, really giving priority to teachers' conventions wherever I could, and in all, I had spoken to at least 20,000 school teachers.

And the response from them is one of the most encouraging things they have found. They have recognized that teaching social science in a broad way, with no specific focus on either history, or geography, is not the way to do it, and they want to change it without abandoning social sciences and social studies. They want very much to get us back into the teaching of history and teaching of geography, and I can assure you, Senator, and your Committee, that the Bicentennial Commission is most anxious to cooperate with the Congress and with the National Geographic, and the teachers, to try to carry this out. Thank you for letting me come.

Senator **Stafford**. Thank you, Mr. Chief Justice. We will certainly take advantage of your expertise, and your offer, and we look forward to working with you. Thank you, sir.

Mr. **Burger**. Thank you, Senator.

Senator **Stafford**. The Committee's next witness will be the Honorable William J. Bennett who is Secretary of the United States Department of Education. From my experience in working with the Secretary, I am sure that he will tell us exactly what he is thinking on this subject this morning.

STATEMENT OF HON. WILLIAM J. BENNETT, SECRETARY, U.S. DEPARTMENT OF EDUCATION, WASHINGTON, DC

Secretary **Bennett**. Thank you very much, Mr. Chairman. It is a great pleasure to be here.

I want to congratulate you on holding a hearing on this very important issue. We have been talking about this for some time. I have been talking about it. It is one of my favorite subjects, and I am delighted that you are holding this hearing.

I have prepared a statement which I have submitted to you, but I think I will depart from the statement and just talk. I hope that is not a mistake.

Mrs. Frankfurter used to say of Justice Frankfurter he only made two mistakes when he was speaking: first, he would depart from his text, and second, he would return to it. [Laughter.]

I will just depart from the text. I would stipulate everything that the Chief Justice said. The Chief Justice has obviously does more in this last year—I think everyone recognizes that this year—to increase the understanding of our Constitution, and to help our children increase their grasp of our Constitution than anyone in the country, and that is a great thing.

And he understands the relationship, the intimate relationship between the teaching of history and civics and geography. I will get to that in a minute, but let me just make a couple other comments, if I may.

I have been, as you know, Mr. Chairman, a regular visitor to America's schools. I have been in 83 classrooms at schools—more than 83 classrooms, 83 schools, and more than that number of classrooms in the United States.

And I have seen some of our best schools, and I have seen some schools that are not so good. I have seen some places where geography is being taught and taught well. I have seen some places where it is not being taught.

But just to give you one impression. One of the things I do when I visit schools is I try to get into the library and see what is going on there, if anything, and what is in there, and second, I look for maps.

When I was in school, as a little boy, in a number of different elementary schools, maps were a fixture in our classrooms. Our classrooms looked much like your classroom does this morning, except they were the roll-up kind, and we would all try to do something to get them to snap back up, and then laugh and hope they would fall down. [Laughter.]

But there they were, and this was a reminder to us that this was important business, the presence of those maps, and teachers would take them down and point things out to us.

I am struck by the absence of maps in many of America's schools. I am never struck by the absence of very fancy audiovisual equipment, TV cameras, computers, and the like, which work about 50 percent of the time.

But I am struck by the absence of maps. A friend of mine lives in a very well-to-do suburban community that has I suppose every asset a school could have, but he was asked by his daughter, his 9-year-old daughter, to bring in the family globe from the library of their house, because there was not a globe in school.

All the equipment in the world and not one globe, not one map in the school. I think that is indicative of the problem we have.

There are lots of studies and lots of statistics, and I know you know them about our students' woeful knowledge, grasp of geography.

The one that struck me the most, I think, was the study done at the University of North Carolina, where it was a test, over time, over a timeframe, a questionnaire of students at North Carolina colleges.

A national sample of college students had been given the same questionnaire in 1950. A comparison of the results shows that the earlier generation averaged 24 points higher than their 1984 counterparts. That is, in 1950, the kids knew a lot more geography than in 1984.

But when reporting the results of 1950, the "New York Times" said: "American college students know shockingly little about the geography of their country." That is what they said in 1950, and the results were worse in 1984.

Now there is no good reason, in my view, why this situation has to be, and we should do some things to remedy it.

First of all, I would venture to argue that kids like geography, and they are interested in geography. They may not know they are interested in geography, but I think they are.

The reason is: anybody who knows children knows that they grow up—they start, at least, growing up, unless we mess things up for them—generally liking the world and having an interest in the world, and having an interest in where things are.

That is an advantage that the teaching of geography has, that not all subjects have. Here come some interested geography students right now, coming in to look at our maps.

Kids like it, and we can take full advantage of it. I remember, as a boy in school, we had a geography class. It was called the geography class. There was no embarrassment about calling it geography. It was not called social studies, or the other world, or the world around us. It was called geography, and we, every day, got in a bus, an imaginary bus, and took off on the Lincoln Highway—which I guess was the only way across the United States when I was going to school—by car, and we stopped in each State, in our imagination, and looked around, and found out what the people did there, and how they talked, and what they manufactured. And we learned a lot about the United States, traveling the Lincoln Highway this way.

I do not know whether that is still done. I am tempted to think that maybe some place, if you travel across the United States in your imagination now in a classroom, you might get into an imaginary airport, sit back and eat for three and a half hours, and arrive in Los Angeles having done nothing but fed yourself for three hours. [Laughter.]

Senator STAFFORD. It would not be on U.S. Air.

Secretary BENNETT. It would not be on U.S. Air says the Senator. [Laughter.]

I am sure we can all trade airplane stories.

Anyway, we did learn about the United States, and I remember, too, that we were asked to bring in maps, our own maps, in which, in school projects, we put down little products for each State. And so we would come in with a little cotton ball on Mississippi, and a little piece of wheat from Iowa, or maybe a politician from Iowa. [Laughter.]

And some potatoes, a little potato for Idaho. And this all sounds rather corny——

Senator STAFFORD. Don't forget maple syrup.

Secretary BENNETT. And maple syrup. That sticky part of the map. That is right. [Laughter.]

And this all sounds rather corny, and hokey, but as a matter of fact it worked pretty well. It was a good project and it helped you remember where places were, and what sort of things went on in places.

I think it is a good thing. Geography also—and there is some research on this—can help students in the development of memory skills, and although memorization is a much discredited practice in America schools, many America schools, memorization is actually quite good for you.

One of the ways people learn to remember things is to have to memorize them, and I will never forget that Boise is the capital of Idaho, because we remembered about "boising" like—it sounded like boiling our potatoes. And the Green Mountains of Vermont led you right into Montpelier, Vermont. Those little mnemonic tricks that can help you from time to time, such as if you are going to see the Governor of Vermont, it is useful to know not to go to Rutland. [Laughter.]

And so on. And then we spread out to the world, and we did a map of Brazil, and we had a little coffee for the map of Brazil, and North Carolina we had tobacco. We could not do that now, I suppose. We would have to bring soybeans, or something more acceptable.

But anyway, these things can help and kids are genuinely interested in it because they are interested in the world.

How do we do it? I think the Chief Justice is exactly right. I think we go back, and we remind ourselves that this is an essential subject, that it is essential to learn.

In our book, "First Lessons," our book about elementary education, Mr. Chairman, we talk about the important role of geography and we said it several times in that book. That social studies needs to be reconstructed. It needs to be returned to what it was: to history, and geography and civics. That is what social studies should mean.

In many places right now, it is not clear what social studies means, but one of the things that we suspect is that it no longer means, as much as it once did, an appreciation and grasp of geography, of the external world.

If I could, just a couple more comments and I will be done. How did this occur?

I think in fact that geography was something of a casualty of educational innovation. With educational innovation came the discrediting of all sorts of traditional modes of instruction and subjects, and one of the first to be discredited was geography.

One of the reasons that I think geography was discredited was geography is largely, not completely, but largely a study, a discipline which requires a grasp of facts.

And you know as well as I, Mr. Chairman, the facts took something of a beating during the cultural revolution we had in this country in the late 1960's and early 1970's.

People wanted to stress creativity, and it did not matter whether people knew anything or not, just as long as they were creative, and so the facts took a beating.

Boring lecture after tedious lecture would tell us it is not enough for our children to know facts. They need to be creative and thoughtful, and have ideas.

We did that so much, that we finally convinced ourselves that the facts were not worth anything at all. And when you say the facts are not worth anything at all, you are dealing a "death blow" to education, and specifically, geography.

In Saul Bellow's novel, "Mr. Sammler's Planet," the plight of the geographer in an age of innovation is cited. One of the characters there is a geography professor, and he says "I wish I could keep up with the rest of my academic colleagues, and do something new and innovative." But when my students ask me how to get from St. Louis to New Orleans by water, the answer is still the Mississippi. I wish I could give them a new answer, something different, from the 1950's or 1940's or 1930's, but that is still the way it is, and thus, I think geography has been hurt.

It is not a bad thing to know your facts. It is not a bad thing to know where things are. It also, of course, has the larger significance of being at the base for other kinds of considerations and other kinds of knowledge.

It is important to know where Nicaragua is. It is important to know where Afghanistan is. It is important to know where the Persian Gulf is, and other places in the world that we are talking about.

And you are not really going to know that unless you are able to review the facts. I do not want to seem just to be a curmudgeon, though, about the facts. With the study of geography, with the grasp of where places are, one can also help to overcome stereotypes, and a good, sound study of geography can help do that.

Just three quick examples. I lived in the South for a number of years, in North Carolina, and I used to tell some of my Yankee friends that I enjoyed the mountains of North Carolina very much.

And sometimes they would look puzzled, as if there were not any mountains in North Carolina. Some people in the North think the South is entirely a swamp, and their notion of the South was created by seeing the movie "In the Heat of the Night," and they have never recovered from it. That is what they think the South is.

That is a stereotype which can be overcome by understanding a little bit about the geography of North Carolina. I am sure you have run into people who think Vermont is filled with nothing but mean farmers who will not give you accurate directions. [Laughter.]

When in fact it is a lot more diverse, richer, and friendlier than that. But I guess the worst stereotype is from my own State of New York, where I go every year, or try to, to the Adirondacks.

And I tell people I love to go up to New York to hike and backpack, and people say how can you backpack skyscrapers, because when they hear New York, they think that is what New York is.

Well, in this way, a failure to know geography is a limitation of one's possibilities. You will miss opportunities for enjoyment, self-realization, grasp, and appreciation of other people, if you do not know some of these basic facts.

It is not an insurmountable problem. We know some schools that do a very good job on this, and we would be happy to give your Committee a report on some of them. It can be done.

Again, I think the main thing that is called for is a re-focus of the social-studies curriculum, which I think has been debased in some places, diluted, in other places just become a mishmash of things, and remind ourselves that it should be principally history, geography and civics, in every year of the elementary school.

Before I close, I just want to say that little things can make a difference here, too. Major curriculum changes I think are the heart of it, but little things can make a difference, too, and in this building, I want to salute the National Geographic, because I think one of my favorite educational toys of the decade—I am actually out of hot air right now, which might surprise you, Mr. Chairman. I am not going to blow this up, but I can give it a try.

This is the National Geographic's beachball globe. It is useful for throwing or kicking at the beach, and it is a map of the world, and I salute Gil Grosvenor, and others at National Geographic for coming up with this idea.

Kids go to beaches all around the United States, there are beaches everywhere—not everywhere, but lots of places—and this is very useful. While kicking this to your partner, you might look and see where you're kicking.

Have you just kicked Australia, or Canada, or the Soviet Union? You know what my preference would be on that. [Laughter.]

Why not little devices, and little toys like this, as a way of saying this study is important, this is your world, this is the world in which you live. You ought to know your way around it.

Thank you.

[The prepared statement of Secretary Bennett follows:]

TESTIMONY OF
WILLIAM J. BENNETT
U.S. SECRETARY OF EDUCATION

BEFORE THE SENATE SUBCOMMITTEE ON
EDUCATION, ARTS AND HUMANITIES
October 29, 1987

Mr. Chairman and Members of the Subcommittee, I would like to thank you for the opportunity to testify today on the condition of geography education in the United States. It is a subject I have been concerned with since I was appointed two-and-a-half years ago. Indeed, in my first speech on the 3 C's of education -- content, character and choice -- I said: "We should want every student to know how mountains are made.... They should know where the Amazon flows.... They should know about the Donner Party and slavery, and Shylock, Hercules and Abigail Adams, where Ethiopia is, and why there is a Berlin Wall." I spoke of how geographical understanding is an essential element of every child's education.

I'm sorry to report today that the status of geography education in America is not what it should be. Geography is as much a part of a quality education as reading, writing and mathematics, but research shows that the teaching of geography in our schools is simply not good enough. In survey after survey, American students fail to show an adequate knowledge of the most basic geographical facts. The numbers tell the story:

o In a 1984 test conducted in a major Southern city, more than 20 percent of the 12-year-olds could not locate the United States on a world map; an equal number mistook Brazil for the U.S. Furthermore, one-quarter of the high school seniors tested this year could not name the country just south of the United States.

o In a 1984 survey conducted by the University of North Carolina, fewer than half of the 2,200 North Carolina college students tested could identify Texas and Alaska as the largest states. Just over 20 percent could name Rhode Island and Delaware as the smallest. A national sample of college students had been given this same questionnaire in 1950. A comparison of the results shows that the earlier generation averaged 24 points higher than their 1984 counterparts. When reporting the results of 1950, the New York Times had said: "American college students know shockingly little about the geography of their country...."

o Nearly 25 percent of the students tested last year at the University of Wisconsin-Oshkosh could not find the Soviet Union on a world map. When given a map of the 48 contiguous states, only 22 percent of the students could identify 40 or more.

o Although students did fairly well in answering rudimentary geography questions in a recent nationwide study of 17-year-olds, the researchers said they could not "discern ... much evidence that the state of geographic knowledge is strong or secure."

These numbers unfortunately represent the rule, not the exception. Geographic illiteracy can be found at all levels of our educational system -- from elementary school to college. American students rank a poor fourth among eight industrial nations in terms of geographic knowledge. It is sobering to think that many foreign students could know more about America than Americans.

Why worry about geography? Because geography is an important component of -- indeed a pre-requisite to -- understanding our cultural heritage and history. It is impossible for students to understand the Peloponnesian War if they cannot visualize the relationship between Sparta and Athens. It is difficult for them to grasp fully the meaning of Great Britain's defeat of the Spanish Armada if they do not realize England is an island nation dependent on its sea-power for survival. Understanding the historical role and the present situation of Poland depends on a knowledge of its geography -- without natural barriers, the country is almost defenseless in time of war. Students need to know how mountains, deserts and oceans affect the social, cultural and economic development of nations, ours included.

If geography is important to understanding our past, then it is absolutely vital to comprehending our present. How can students assess the conflict in Afghanistan if they are unaware of its proximity to the Soviet Union? How can they understand our nation's concern over the situation in Central America if they can't locate Nicaragua on a map or identify its neighbors? How can they evaluate debate about American policy in the Persian Gulf if they don't understand its relation to international shipping and the transportation of oil?

Now why don't our kids know their geography? American children don't suffer from a genetic deficiency in this area. Our children are not incapable of learning geography. The reason too many of them know too little is simple: we are not teaching them. Instruction in geography began to decline about 25 years ago with the advent of the "new social studies." Curriculum planners mixed together a little history and civics, a dash of anthropology and sociology, and pinch of economics and geography, and came up with what they thought was a recipe for successful instruction. Instead what they served was a casserole of dubious quality. In many cases it didn't taste particularly good and it wasn't particularly nutritious. Not suprisingly, it resulted in very little geography being learned.

The solution to the geography problem is not very complicated: we must teach more geography. Children tend to have a natural interest in geography, so it shouldn't be too difficult. Geography can go well beyond coloring maps and memorizing state capitals. It unleashes our children's imagination and curiosity; it opens the door to discovery. Children need to develop certain cognitive skills before they can handle abstract concepts like "north" and "south." But they can begin at an early age to learn illustrations of the five basic themes of geography education: location, place, relationships within places, movement and regions. And geography becomes increasingly important as students progress through school.

By answering the questions "Where?", "What?", and "Why is it There?", geography builds a bridge to historical and cultural understanding.

It's time we turn our geographic deficiency into geographic competency. Details and specifics of geography programs will vary from state to state and from school to school; efforts need to be tailored to particular circumstances to be effective. But we can cure our nation's geographic illiteracy by following a common prescription: make the teaching of geography interesting; make it challenging; and make it a central part of the school curriculum.

Thank you.

Senator **Stafford**. Thank you very much, Mr. Secretary, for a very interesting discussion.

Your leaving your prepared text, and then possibly coming back to it at the last bit, reminded me of the usual description of a politician's speech. First the one he intended to give, then the one he gave, then the one the press said he gave, and finally, on reflection, the one he wish he had given instead. [Laughter.]

The Chairman of our Committee is here, now, Senator Pell, my long-time friend and partner in educational endeavors.

Senator Pell, do you have a statement at this time?

Senator **Pell**. A brief one, and I particularly congratulate you on being the driving force in organizing this hearing. It is a wonderful idea, and I think we will have a good deal of positive fallout from it.

When you talk about the speech a politician gives, I am always reminded of one of our colleagues who dreamt he was making a speech in the Senate chamber, he woke up and found he was. [Laughter.]

But I particularly congratulate Senator Stafford in the array of witnesses that he has pulled together, including our colleague, Senator Bradley, Chief Justice Burger, Mr. Bobby Inman, and Gilbert Grosvenor whose family I have long known and admired. I think it is just a great idea. I apologize for not being with you as much as my colleague because I have been on the Senate Floor, and must return shortly.

But I also wanted to announce that Senator Stafford, and Senator Bradley and I, are joining together to offer an amendment to the legislation providing for a White House Conference on Libraries.

The legislation is now pending on the Senate Floor, and when the Senate takes it up, we plan to provide an amendment to provide an additional $3 million for education programs conducted through the commission to celebrate the Bicentennial of the Constitution.

The amendment would be earmarked to provide teacher training and retraining in history, and, most important, America. It is a measure originally suggested by Chief Justice Burger, and something we believe will receive strong and favorable support by our Senate colleagues, and I wish you well with this hearing. Thank you.

Senator **Stafford**. Well, thank you very much, Senator Pell. We really appreciate your coming down here, knowing that there are votes this morning.

Mr. Secretary, I had just one question that occurred to me in the course of your very interesting discussion, and that was, part of our problem is because the teachers in our public schools today are poorly prepared to teach geography.

And I am not going to ask a question indicating that we think the Federal Government should try to play a role, but do you have any thoughts on how teachers could be better prepared to do the teaching of geography and history in our public schools?

Secretary **Bennett**. Yes, Senator. A couple of things. I think you are right to point to that as one of the problems, because some of the studies that have been done—as you know—have been done specifically using educational, people who are planning to go into education, people who are planning to go into teaching as the pool.

Two things. One, I think that we now see a general thrust, the result of several different Commission reports, arguing that we need to strengthen a teacher's base in subject matter in their collegiate education.

That more time should be spent on the disciplines of the liberal arts, and certainly, this ought to include geography. One thinks particularly here of the elementary school teacher and the need for that teacher to feel confident to teach the subject.

We find throughout, as we look at this that—and again, it is not particularly surprising—teachers are less likely to teach those subjects in regard to which they do not feel that they are confident and know their material.

If we then neglect the teaching and learning of geography in the high school and in college, we just perpetuate the problem. The lack of confidence is there, and so attention may not be given.

Second, at the Federal level—and I think we could say a word about it—we have tried to pick up on this theme by suggesting—as you know—and you have been a strong supporter of ours in this—efforts to improve a teacher's grasp and understanding of subject matter, either through special summer programs, or other kinds of things.

And one of our proposals at the Department. As you know, we think that if a group of teachers wanted to take the summer, or take part of a year off, if local policy provided for it, there ought to be some opportunity to study geography during that time.

The response, as you know, to the seminars that the National Endowment for the Humanities, that we established, I established when I was there, in which teachers work with subject matter has been terrific, and I think it is the same sort of thing.

Teachers are not going to teach it unless they know it, and they are not going to know it unless their colleges are plain about the fact that this is a condition of graduation.

Senator **STAFFORD**. Thank you very much. Do you have any questions?

Senator **PELL**. No questions. Thanks.

Senator **STAFFORD**. All right. Thank you very much, Mr. Secretary. We appreciate your coming.

Secretary **BENNETT**. Thank you, sir. Thank you, Senator Pell.

Senator **STAFFORD**. I have got some grandchildren I will have kicking that around.

Our next witness will be Senator Bradley who is our partner in this enterprise, and the principal co-sponsor of the resolution that has brought us to this point.

So, Senator, we are delighted you are here. We know the difficulties you and Senator Pell have faced in getting here, and we have pointed out that there are rollcalls this morning that have upset the regimen we had originally planned.

The Senator from Vermont no longer has to worry about being asked about my absences next year since I will not be running for another term, so I am a little looser on that than you are, but I am pleased you are here and the floor is yours.

STATEMENT OF HON. BILL BRADLEY, A U.S. SENATOR FROM THE STATE OF NEW JERSEY

Senator **Bradley**. Thank you very much, Mr. Chairman, I am glad that you put geography first this morning.

It is a pleasure to be here today and to underscore the importance of a national effort to improve our children's awareness of this country and the rest of the world.

I would like to call special attention to Jeremy Gruenwald from Turnersville, New Jersey, and who will be the star witness today before the Committee.

He will bring you a message from a 6th grader, which is, I think, probably the best kind of message for those of us who are concerned about the study of geography.

It was really because of my concern about growing illiteracy in geography, that I introduced the resolution for Geography Awareness Week, and as this special week approaches, I am quite encouraged by what we are seeing in New Jersey and across the country.

Other witnesses have spent time dealing with the statistics that verify the extent of illiteracy and geography. Hopefully, National Geography Awareness Week will have some role in trying to counter this alarming deterioration in our awareness about the world in which we live.

The statistics that, for me, are the most vivid, are things like 39 percent of the high-school students in Boston could not name six New England States. Twenty-five percent of the students in Dallas could not name the country immediately to the south of the United States.

And 45 percent of those students in Baltimore who were tested could not respond correctly to the instruction on the attached map: "Shade in the area where the United States is located."

So, Mr. Chairman, there is clearly a problem here. It is shocking. It is, to a certain extent, frightening. We depend on a well-informed population to maintain democratic ideals which have made the country great, to participate in a world economy that becomes increasingly competitive, and to assure ourselves some sense of security.

It should not make us comfortable to know that 63 percent of the Americans participating in a nationwide survey by CBS and the Washington Post, could not name the two nations involved in the SALT talks.

So, Mr. Chairman, we are a nation with worldwide involvements, whose global influence and responsibilities demand an understanding of lands and cultures around the world, and I hope that National Geography Awareness Week will bring this home to many people in this country.

I think we have touched a nerve because people realize that this is an area that has been neglected.

We are all aware of the level of geographic ignorance which much of the American public faces in an increasingly complex world, and, frankly, as Americans, we have to understand this complexity if we are to make insightful and intelligence decisions, both in domestic and foreign policy.

And the erosion of geography education in our schools only exacerbates that problem. And there is another point, and that is geography is fun.

I mean, which of us has not grown up in a family that played the capitals game? How many of us would have had much longer car rides had we not been able to name the longest river in the world, or the longest river in Africa, or the tallest mountain, or the mountain range with the most mountains that were above 20,000 feet, et cetera. Everyone has their own favorite.

I have found, since introducing this, and getting the response that has been given to it, that this initiative fits my personality. It is one of those things that I did in part because I recognized the problem. Only once I got into it, I realized how important it was to me.

Introducing National Geography Awareness Week, made me reflect on how much I have been afflicted throughout my whole life with wanderlust, and how many times in my own life this interest has played a very significant role in my own personal development.

Everyone has their favorite saying about how history shapes geography, or how geography shapes history. America is a nation that has been fundamentally determined by our geography, our continental size, and by the nature of our land.

We are a people who have had a relationship with the land that is central to our national character. In order to understand that importance, whether it be Jefferson's understanding of the importance of land as opposed to commerce, or whether it be how our frontier developed, you have to know that the path for the growth of our nation was through the Cumberland Gap and down the Ohio and Mississippi, and across the Plains, and over the Rockies, and on to California.

A fuller appreciation of our nations history comes if you turn to a map of the United States, and you simply follow the geological stair steps that go from the Grand Canyon to Zion National Park to Bryce National Park.

Taking those elevations, and in the course of those elevations, and in reading the layers of geology, you experience a deeper understanding for what geologists call "deep time," measured in hundreds of millions of years, and that provides some resonance and reflection for our own time, which is measured in nanoseconds, or 30-second news bites on the evening TV news.

And if you move a little eastward, you then find, not in geological terms, but, in human terms, a similar migration. If you stand in the desolate, windy, howling area of Chako Canyon, and think about the Anazazi culture, and move north into Mesa Verde, and see how it moved and why it moved, you see that geography fundamentally determines cultural movements as well as migration patterns.

I have always felt that you cannot understand history unless you understand geography, and besides, it is fun. Fun not only because of the capital game in the family car, but because of going new places to meet new people.

As a United States Senator, that experience with wanderlust has had, I think, an important role for me. I remember back in the 1970's, when I was on the road more than I am today, in more places, I was in Northeast Afghanistan in search of the remnants of Alexander's descendants. That trip made a deep impression upon me.

And so today, when we hear of the Soviet Union moving into Afghanistan, and when you hear of their concentration of firepower in the Konar Valley of northeast Afghanistan, for me, the Konar Valley is not some place on a map but it is people that I encountered in valleys that I experienced, and mountains whose grandeur gave a dignity to the area, and whose people lived in that grandeur and worked to form a life out of those mountain passes.

Such vivid memories give a depth and perspective that otherwise would not be there.

So I hope that through National Geography Awareness Week we will recognize those teachers who, over the years, have slogged away, insisting that the capitals are important, and that the rivers are important, and that the mountain ranges which were once crossed should have names, and we should remember those names, or maybe even understand how they got those names.

In New Jersey, as the week approaches, we are going to have a lot of fun focusing on geography. We are going to have a Geography Bee. We have had 600 students in the State tested. From these 600, 40 finalists will be selected. From these 40 we are going find and crown the winner of New Jersey Geography Awareness Bee.

I will also teach a geography class in one of the schools in New Jersey. I have not yet decided whether I will venture into the 5th, 6th or 7th grade.

Mr. Chairman, I am also quite aware that once you move into the treacherous territory of geography, and attempt to take a cutting-edge role as you, Senator Pell, and I have tried to, you make yourself very vulnerable to enterprising members of the press.

As soon as I introduced the National Geography Awareness Week I wanted to let people know that there was such a thing, I naturally have to call a press conference to announce this intent.

Of course since the press was—as it always is—innovative, and creative, the first question was not about the study of geography, but it was a rather pointed question. Could I name seven countries in Sub-Saharan Africa.

Mr. Chairman, I know you will not ask me that question today, but in case you do, I am prepared. [Laughter.]

Mr. Chairman, I want to compliment you for holding this hearing and this National Geographic Society for housing them. I think, the National Geographic magazine has played a role in all of our lives. It has triggered our imaginations of distant places, and given us pictures and text to fuel further imaginations.

And I would hope that as a result of National Geography Awareness Week, that there will be many other 4th, 5th, 6th, 7th graders, and maybe even some older, who will understand the importance of this to our lives, to our nation's future, and in the process, some of the joy that can be derived from pursuing this area of study.

Thank you.

[The prepared statement of Senator Bradley follows:]

TESTIMONY BY
SENATOR BILL BRADLEY
BEFORE THE SENATE SUBCOMMITTEE ON
EDUCATION, ARTS AND HUMANITIES
October 29, 1987

Mr. Chairman and Members of the Subcommittee, I am pleased to be here today to underscore the importance of a national effort to improve our children's awareness of this country and the rest of the world. That's why I introduced the resolution to designate the week of November 15 as Geography Awareness Week. As the observance of this special week approaches I am encouraged by the response in New Jersey and across the country.

National Geography Awareness Week has touched a nerve, an exposed nerve, alerting us all to the compelling national need to revitalize the study and use of geography in American life.

We are all well aware of the level of geographic ignorance with which much of the American public faces our increasingly complex world. We as Americans must understand this complexity if we are to make intelligent and insightful decisions, both in domestic and foriegn policy. And the erosion of geography education in our schools only exacerbates the problem.

Since my youth I have been fascinated by other peoples and places. So whenever I have been able, I have taken the opportunity to travel. One of the woundrous places I visited was Afghanistan.

In the early seventies, with a pack on my back I hiked through the Hindu Kush Mountains meeting the people, those long distant descendants of Alexander, and viewing their cherished land. From those encounters flowed an abiding appreciation of these unique people and their beautiful countryside.

The December 1979 Soviet invasion of Afghanistan was not a remote event. I could easily recall the mountain passes I had walked and I could envision them echoing with the rumble of rolling tanks and troop transports. My personal encounter with the Afgan countryside and the Afgan people has contributed to my perspective on the policy debate regarding appropriate U.S. response to the Soviet action.

I am well aware that most Americans may not have the opportunity for extensive travel here or abroad. That only deepens my conviction of the central importance of geography education in the American classroom. If our people can not travel to see for themselves the wonders and challenges of this country and of the rest of the world they must be educated to appreciate the diversity of the world and what that diversity implies for us.

I am gratified that so many members of Congress have joined me in support of this ideal. The Joint Resolution was cosponsored by 62 of my distinguished colleagues, led by the distinguished Chairman of this hearing.

More than ever before we must insure that this nation does not become a nation of global illiterates. Yet, we are faced by a serious and growing problem. Our youth has a fundamental lack of knowledge about the character of the world around them. Even more disturbing, many of our young people are even ignorant about their own country.

While the designation of an "awareness week", by itself, will not solve the problem, such a week does draw attention to our need to insure that both we and our children know our world in all its complexity and diversity.

There is much to be done. As evidence let me share with you some of the startling results of certain recent surveys:

* In January of this year, a survey of 5000 high school seniors was conducted in eight major cities across the country. The news could not be much worse.

* In Boston, 39% of these students could not name the six New England states.

* In Baltimore, 45% of those students tested could not respond correctly to the instruction: "On the attached map, shade in the area where the United States is located."

* In Minneapolis-St. Paul, 63% could not name all seven continents.

* In Hartford, 48% could not name three countries in Africa.
* In Dallas, 25% could not identify the country that borders the United States to the South.

* Further, in 1984, only 12% of students surveyed at a top state university could name all of the Great Lakes. Almost 70% of these students could not name even one country in Africa between the Sahara and South Africa.

* A survey by the Asbury Park Press in New Jersey found that on average, 12th graders could identify only 41% of the states.

Mr. Chairman, such news is not only shocking; it is frightening. We depend on a well-informed populace to maintain the democratic ideals which have made this country great. When 95% of some of our brightest college students cannot locate Vietnam on a world map, we must sound the alarm. When 63% of the Americans participating in a nationwide survey by CBS and the Washington Post cannot name the two nations involved in the SALT talks, we must acknowledge that we are failing to educate our citizens to compete in an increasingly interdependent world. In 1980, a Presidential commission found that U.S. companies fare poorly against foreign competitors in part because Americans are ignorant of things beyond their borders.

We are a nation with worldwide involvements, whose global influence and responsibilities demand an understanding of the lands and cultures of the world.

That increased understanding is what I hope Geography Awareness Week will begin to generate.

Seven days have been set aside to focus national attention on the integral role that knowledge of world geography plays in preparing our citizens for the future of our world. I have planned many activities in New Jersey, from a Statewide Geography Awareness contest for junior high school students to special recognition for classroom geography projects at all grade levels. I hope other Senators will sponsor similar activties in their own states.

Geography Awareness Week is just one step in a revitalization of the study of geography. All of our citizens should appreciate both the great beauty and diversity of this nation and its place in the world. To retain a leadership position in the world, future generations of Americans must understand our world. This is what I hope our efforts will help realize.

Senator **Stafford**. Well, thank you very much, Senator. It is a delight for us to be working together on this important subject, and we certainly share your views.

Senator Pell, do you have any questions?

Senator **Pell**. No. I just want to congratulate Senator Bradley on a wonderful statement and I share, probably more with imagination than deeds, that wanderlust.

Senator **Stafford**. Senator, it did occur to me that even in the mundane fields of environmental legislation, environmental issues that I have been involved in over the last 17 years, it is well for people living in the Northeast to have some idea of where the Midwest is in this country, and to understand what States are upwind and what States are downwind, if they want to understand where some of the things that cause acid rain are coming from.

And lately we have had a global, deep concern, over the holes in the ozone layer over Antarctica. I would think that most of the people in this country would want to have some idea of where Antarctica is, and what the possibilities are for depletion of the ozone layer over the whole globe.

And so even in environmental issues, geography plays a major role, and the better people understand geography the more likely they are to understand the environmental issues that this country and the whole globe face today.

Senator **Bradley**. Mr. Chairman, I would simply like to echo your words, and since we are in the National Geographic building, recall any number of stories about the Amazon, that were read and viewed in National Geographic and reflect on the threat to some of our tropical environments now.

So I think that you are right on target, as usual, and I appreciate the opportunity to be here today.

Senator **Stafford**. Thank you very much, Senator.

Senator **Bradley**. Thank you, Mr. Chairman.

Senator **Pell**. Thank you.

Senator **Bradley**. Senator Pell, Senator Stafford. And I might also say that I think your ability to attract such a quality group of witnesses, ranging from the former Chief Justice of the Supreme Court to a very high former official in the intelligence community and to Jeremy Gruenwald, the 6th-grader from Turnersville, New Jersey, only indicates the breadth of interest in this subject. And Jeremy, wherever you are, relax and be great.

Senator **Stafford**. Thank you very much, Senator.

We are now going to ask the first panel to come to the witness table.

The panel will consist of Mr. Gilbert Grosvenor who is president and chairman of the National Geographic Society, our host for this hearing this morning; Mr. Andrew McNally, who is chairman of the board of Rand McNally and Company. We use one of his publications every time we drive to Vermont.

Ms. Mylle H. Bell, who is director, Corporate Planning and Development, Bell South Corporation of Atlanta, Georgia. And Mr. B. L. Turner, II, Graduate School of Geography, Clark University, Worcester, Massachusetts.

If they would come to the witness table, we would appreciate it.

Well, ladies and gentlemen, we never seem to have enough time for hearings, and we are always somewhat perturbed by the fact that we know how much time has been spent in preparation for these hearings, and we feel guilty in asking you to be brief.

The lights in front of you indicate you will have five minutes, and I hope you have been warned, and that none of you will decide you need to run a red light before we get through.

Mr. Grosvenor, we want to particularly thank you for your hospitality this morning, and we would invite you to be the lead witness for the panel.

But first I will insert in the record an introductory statement by Congressman Panetta that was forwarded to me.

[The prepared statement of Congressman Panetta follows:]

Statement on Geography Awareness to
the Senate Subcommittee on Education, Arts, and Humanities
October 29, 1987

Honorable Leon E. Panetta
16th District, California

I would like to express my appreciation to the Chairman and the Subcommittee for giving me the opportunity to submit a statement for the Subcommittee's hearing on geography awareness held at the National Geographic Society. I feel it is very important that this oversight hearing is being held as one of a number of activities intended to focus attention on geography education. This is the main purpose, as you know, of Public Law 100-78, designating the week of November 15, 1987 as "Geography Awareness Week." I was proud to initiate this resolution in the House, and am very pleased to be able to join my distinguished colleagues, Senators Bradley and Stafford, in participating in this hearing. My sponsorship of Geography Awareness Week is another expression of my strong belief in the vital importance of foreign language and international education.

At this time, I would also like to commend the National Geographic Society, and especially its president, Gilbert Grosvenor, for hosting this hearing and for its strong leadership in the area of geography education. For many years, as you know, the Society has produced top-quality materials and programs that have significantly enhanced our nation's knowledge of the rest of the world. The Society has planned an extensive program in connection with Geography Awareness Week to help increase Americans' focus on this important discipline.

As we all know, evidence abounds for the need to increase our attention to this fundamental subject. In 1946, only 46% of college students tested in a nationwide survey at one top state university could name all of the Great Lakes. In 1984, the news was even worse: only 12% of students surveyed at one top state university could name all of the Great Lakes. In 1950, 84% of these college students knew that Manila was the capital of the Philippines; by 1984, this number had shrunk to 27%. Furthermore, almost 70% of these students could not name a single country in Africa between the Sahara and South Africa.

This news is not only shocking - it is frightening. We depend on a well-informed populace to maintain the democratic ideals which have made and kept this country great. When 95% of some of our brightest college students cannot locate Vietnam on a world map, even after our extensive involvement in that country, we must sound the alarm. When 63% of the Americans participating in a nationwide survey by The Washington Post cannot name the two nations involved in the SALT talks, we must acknowledge that we are failing to sufficiently educate our citizens to compete in an increasingly interdependent world.

This ignorance of geography, along with a comparable lack of knowledge of foreign languages and cultures, places the United States at a significant disadvantage with other nations economically, politically and strategically. We cannot expect to remain a world leader if our populace does not even know who the rest of the world is!

In 1980, a Presidential Commission found that U.S. companies fare poorly against foreign competitors partly because Americans are often ignorant of things beyond our borders. As Governor Gerald Baliles said in a Southern Governors Association report, "Americans have not responded to a basic fact: the best jobs, largest markets, and greatest profits belong to those who understand the country with which they are doing business."

Japan's remarkable recovery since the end of the War has been the greatest economic success story of the century, much to the chagrin of many of her competitors. The success can be attributed to a number of factors, but I do not think we can underestimate the importance of Japan's international marketing strategies, including especially its strong emphasis on other languages and cultures. The Japanese have deliberately prepared their businessmen and other professionals to operate in a global marketplace, with multi-cultural customers. They have learned the language, analyzed the needs, grasped the culture, and tried to understand the basic psyche of all potential consumers. It is estimated, for example, that there are 10,000 Japanese businessmen who speak English in the United States, while less than 1,000 Japanese-speaking American businessmen are in Japan.

One of the the key themes and tasks for this Congress is restoring America's "competitiveness" in a highly complex, rapidly-changing world. Improving our knowledge of the geography, language and culture of other lands is a concrete, attainable and important goal in the context of international trade and our place in the world economy. It is a substantial way to give content to the "buzzword" of competitiveness. As John C. Lowe, chairman of the geography department at George Washington University, has commented:

> "Business schools are beginning to understand that there is a big gap in their international business programs. If you are not aware of

the affinities and subtleties..." of other cultures "... before you launch into a campaign to market a product, you can fall flat on your nose."

The understanding necessary to accomplish this, as I have said, can come only from knowledge of the peoples, cultures, resources and languages of other nations. This is the sort of knowledge that the study of geography seeks to impart. However, the discipline of geography is seriously endangered in this country. Departments of geography are being eliminated from many institutions of higher learning, with only 370 colleges and universities in the country now offering geography degrees, and less than 10% of elementary and secondary school geography teachers having even a minor in the subject.

However, there are a number of hopeful signs that geography education is beginning to experience a long-awaited and badly-needed resurgence. The National Geographic Society has instituted a "pilot school" program in which schools in different parts of the country establish innovative geography education programs to test their effectiveness. One of the pilot schools, Alice Deal Junior High here in Washington, was named a leading school in the Grade 7 competition of the National Council for Geographic Education's 1987 National Geography Olympiad. Another, Audubon Junior High in Los Angeles, was one of eleven California winners in its category in the U.S. Department of Education's Secondary School Recognition Program. The Virginia Geographic Alliance is releasing a state map emphasizing Virginia's ties with other parts of the United States and the world, for use in schools throughout the state. The University of Tennessee is instituting a requirement that incoming students there have a certain level of knowledge of geography. This is going to cause elementary and secondary schools throughout the state to beef up their geography education programs. And, in addition to the declaration of a national Geography Awareness Week, a number of states, including Oregon, Colorado, Alabama, North Carolina, Virginia and Utah have all instituted such weeks at the state level. These will all be important occasions to promote geography education and awareness in each state.

Another very exciting development is happening at the state level in my home state of California. The state had found, in standardized social studies tests, that students were sorely lacking in their knowledge of geography. Therefore, the state Board of Education adopted a new, state-wide history-social studies framework that will integrate the study of geography in the history and social studies curriculum from kindergarten to 12th grade. Under this framework, geography will be studied in specific relation to the history and culture of each country, region and period studied at each level. In the lower grades, students will practice mapping skills while learning about different places. The study of United States history in grades 5, 8, and 11, and of world history in grades 6, 7, and 10 will emphasize geography as an integral part of the curriculum. Social studies electives offered in 9th grade will have to include at least 2 substantive geography education electives. The study of economics in 12th grade will include a focus on the increasing interdependence of nations and regions in the world's economy. Texts for the program are scheduled to be ready by 1989, and the state plans to fully implement the curriculum by 1990. The new framework is considered a potential landmark step, one that will hopefully initiate a broad movement for improving geography, and overall social studies, education throughout the country.

Mr. Chairman, we are a nation with worldwide involvements. Our global influence and responsibilities demand an understanding of the lands, languages and cultures of the world. It is for this reason that this hearing and all of the many other activities and events connected with Geography Awareness Week and the improvement of geography education are so important in preparing our citizens for the future of our increasingly interdependent, interconnected world. It is already evident that Geography Awareness Week will be just the first step in a revitalization of the study of geography in this country. All of our citizens should have access to, and the benefits of, this important field of knowledge that will help them to better appreciate and function in this beautiful and diverse nation, and in our much more diverse world.

Senator STAFFORD. Mr. Grosvenor.

STATEMENTS OF GILBERT M. GROSVENOR, PRESIDENT AND CHAIRMAN, NATIONAL GEOGRAPHIC SOCIETY, WASHINGTON, DC; ANDREW McNALLY III, CHAIRMAN OF THE BOARD, RAND McNALLY & CO., CHICAGO, IL; MYLLE H. BELL, DIRECTOR, CORPORATE PLANNING AND DEVELOPMENT, BELL SOUTH CORPORATION, ATLANTA, GA; DR. B.L. TURNER II, GRADUATE SCHOOL OF GEOGRAPHY, CLARK UNIVERSITY, WORCESTER, MA

Mr. GROSVENOR. Thank you, Senator, and Senator Pell, it is nice to have you back. I suspect I am the third generation of my family to welcome you to this headquarters. It is good to have you here.

Senator PELL. Thank you.

Mr. GROSVENOR. I am pleased to testify on the integral role that geography should play in our schools. Together with legislators, educators, and concerned citizens, we share a fundamental objective that future generations of American students receive appropriate geographic training that will equip them to effectively manage this country.

Internationally, we must be well informed if we are to compete and excel in the world marketplace.

I commend this Subcommittee for holding this hearing, and for its continued efforts to focus attention on geography in every school district.

Although it has been neglected for years as a requirement for elementary and secondary studies, geographic curricula should be at the core of students' understanding of the world.

Geography becomes an umbrella discipline for understanding history, social organizations, cultural, political, and economic development, as well as the environment.

By asking why particular places have specific characteristics, and by asking how these places affect our lives, geography helps explain how humans interact, and how regions develop.

Geographic knowledge of our global neighbors is absolutely essential to international understanding and trade. American businesses depend on international trade for 30 percent of their profits. Forty percent of our American farmland products are exported.

However, international trade is intensely competitive. While our geographic knowledge is decreasing, other nations continue to stress the discipline. England, Japan, the Soviet Union, Eastern and Western Europe, Australia, Canada, all do a far better job in geographic education.

And why? Well, partly because our schools have not emphasized geography. In recent years, less than 10 percent of secondary schools were offered geography, and furthermore, inadequate training of geography teachers is appalling.

About 25 percent of our geography teachers for grades 7 through 12 have taken no geography courses themselves in college. Only 10 percent majored in geography. The Geographic is addressing this ignorance of basic concepts through a public-service program to improve the teaching, training, and understanding of geography.

Two years ago, we initiated the Geography Education Program which brings together elementary and secondary school teachers, university faculties, and policymakers to implement local curriculum improvements.

With better trained and highly motivated teachers, we will meet the challenge. For example, educational reform measures in Texas mandated that world geography be offered as an alternative to world history.

Unfortunately, many school districts could not fulfill this mandate because of a shortfall of trained teachers. Accordingly, in 1986 and 1987, we brought teachers from Texas for a four-week summer institute here in geographic training.

We helped fund two institutes at College Station and in San Marco, Texas. We will accelerate this program.

We are also creating stimulating learning materials. Our brightest children, familiar with personal computers and the moving image, are simply bored with traditional textbooks.

We will bring stimulating technologies into our classrooms, technologies that will motivate students. Through joint efforts with Apple Computers, and Lucas Films, we are coupling computers and optical technologies to produce innovative curriculum materials.

We believe that the political, economic, and environmental future of our country, indeed, or our world, depends on a deeper understanding of our interdependence on Planet Earth.

We must equip our young people with the best tools we can devise. We must reach the grassroots of America to encourage geography education. The passage of the Congressional resolution designating November 15 to 21, 1987 as the first Geography Awareness Week has already provided this mission with substantial public attention.

We have gained momentum. We must stride forward, relentlessly, if we are to succeed. Thank you, sir.

[The prepared statement of Mr. Grosvenor follows:]

TESTIMONY OF GILBERT M. GROSVENOR
PRESIDENT, NATIONAL GEOGRAPHIC SOCIETY
on behalf of
THE NATIONAL GEOGRAPHIC SOCIETY
before the
SENATE SUBCOMMITTEE ON EDUCATION, ARTS, AND HUMANITIES
OVERSIGHT HEARING
on
October 29, 1987

I am Gilbert M. Grosvenor, President of the National Geographic Society, and I am pleased to testify on the integral role that geography awareness and geographic literacy should play in our nation's schools. The National Geographic Society is actively conveying the growing importance of geographic study as nations, continents, and our entire world become increasingly interdependent. Together with legislators, educators, and concerned citizens, we share a fundamental objective: that the next generations of students receive the geographic training they will need to understand their environment better, and to compete and excel in the world marketplace.

Of course, Chairman Pell and the entire Subcommittee on Education, Arts and the Humanities are proven supporters of increasing the role of geography in American education and other reforms necessary to improve our nation's schools. I commend the Subcommittee for holding this hearing and for its continued efforts to focus attention on the importance of geographic curricula.

Our nation is exposed to a barrage of information demonstrating our failings in geography. Polls, studies, and reports show that geographic illiteracy is confronting all of America. High school students can not identify bordering states. At state universities in North Carolina, less than 50 percent of students tested knew that Alaska and Texas were the two largest states, and only 27 percent had had a geography course in high school. Unfortunately, a listing of such statistics could go on and on.

Results like this force us to confront whether or not we fully intend to teach geography and to make it meaningful. We must respond to the question, "Why is it important that our students learn geography?" Furthermore, we must ask "How will our nation as a whole benefit from reestablishing geography in our school systems' curricula?"

Many members of my generation may not have fond memories of studying geography. When poorly taught, geography can be stiff and frozen, a mere exercise of memory. Indeed, today's geography students should do much more than recite names of places that they need know little or nothing about. Yet this is far from the dilemma facing us today, when 25 percent of Dallas students tested cannot remember the name of the country that borders Texas to the South.

At issue, of course, is not that students merely learn the word "Mexico", or, for that matter, the names of its provincial capitals. Instead, it is important that students learn about how Mexico and other countries and regions of the world---as well as different places in our own country and different parts of our immediate physical environments---are interrelated.

Although it has been neglected for many years as a requirement of elementary and secondary studies, geographic curricula can be at the core of students' understanding of their world. As the maps that geographers use as their tools become much more than depictions of locations to be memorized, the study of geography becomes an indispensable tool for understanding history, social organizations, cultural and political development, as well as the environment. By asking why particular places have specific characteristics and, secondly, how these places affect our lives, geography can help to explain our relationship to our environment, how humans interact, and how regions develop.

Such knowledge is especially important today, as the "global village" becomes an increasing reality. The recent financial panic took place in markets throughout the world. When a professor at the Wharton School of Business states in the Washington Post that, "This is one financial world today," it is a world full of far-away and very different places that we must understand if we are to compete and survive.

Americans in all walks of life must strive for the competitive advantages that geographic knowledge can offer. American businesses depend on international trade for 30 percent of their profits; 40 percent of American farmland produces for export. We must understand all we can about where products will be available, and, most importantly, the economic and competitive capacities of other parts of the world.

Ignorance of geography can have severe consequences. An estimated 15 to 25 percent of American business and government officials return home before an overseas assignment is completed, often because of their inability to interact in the new setting. An estimated two-thirds of the failures of overseas projects are attributed to the inability of personnel to work effectively with overseas clients, colleagues, officials, or staff. If these officials could rely on a geographic perspective, from which the similarities and differences of various places could be better understood, the adaptation process certainly would be easier.

By using geographic knowledge, we can create and expand markets. In competition with 1,000 sites in 38 states, the State of Tennessee secured General Motors' huge Saturn automobile plant, by convincing GM that the geography of Spring Hill -- location, place, region, climate, transportation, economic geography, population demographics, and environmental quality -- matched the company's needs. The Commonwealth of Kentucky attracted a major Toyota assembly plant to their state by incorporating the same kind of geographic logic into their arguments.

Practical applications of geography also exist on a local level. The location decision of retail stores, restaurants, markets, housing developments, all hold out the possibility for different types of interactions that can affect their success. Like the Tennessee and Kentucky experiences, American businesses and business people can learn to utilize geographic advantages, a crucial requirement in our increasingly complex world.

Agreement on the importance of studying geography, both for the sake of individual students and our nation as a whole, is but the first step in what must be a dedicated rebuilding process. Geographic education in the United States has deteriorated in the last two generations. Compare these results from a nationwide quiz sponsored in 1950 by the New York Times with the results of a similar test today: in 1950, 46 percent of the college students tested could name all five of the Great Lakes; in 1984, only 12 percent. In 1950, 78 percent knew the principal country through which the Amazon river flows; in 1984, only 27 percent. In 1950, 84 percent knew the city of Manila is in the Philippines; in 1984, only 27 percent.

While our geographic knowledge is decreasing, other nations continue to stress the importance of geographical study. England, Japan, the USSR, Australia all do a better job in geographic education. A United Nations study of 30,000 ten and fourteen year olds in nine countries found Americans next to last in their comprehension of foreign cultures.

Why are we creating a competitive disadvantage in geographical knowledge when we can least afford it? Part of the answer lies in our school systems' lack of emphasis on geography. In recent years, less than one of ten U.S. secondary school students were offered geography as part of their curriculum. Furthermore, our inadequate training of teachers who teach geography is well past a crisis stage. Between 20 and 30 percent of teachers of geography in grades seven through twelve have taken no geography courses themselves; only 10 percent majored in geography. Does it reflect our national priorities when we so often hear about football coaches being pressed into teaching geography?

We need a sufficient number of geography teachers and geography courses to let students understand a world that they hope to have some part in shaping. How indeed can we expect our nation to have input into policy decisions about Central America or the Persian Gulf when students do not even know what or where the countries of these regions are, much less about their physical geography or social and economic systems?

At the National Geographic Society, we have been addressing the ignorance of basic concepts in our youth through a public service program designed to improve the teaching and understanding of geography. Over two years ago, we founded the Geography Education Program, which brings together elementary and secondary school teachers, university faculty, and public policymakers to implement local curriculum improvements in the teaching of geography. This program, funded in excess of $4 million annually, now involves 15 alliances in 13 states and the District of Columbia to sponsor geography institutes and workshops that improve teachers' knowledge and enhance their teaching abilities.

With better trained teachers, we will be better able to meet increased demands to study geography. For example, educational reform measures in Texas mandated that world geography be offered as an alternative to world history. Unfortunately, many school districts could not fulfill this mandate because of a lack of trained teachers. Accordingly, in the summers of 1986 and 1987, we brought a number of Texas teachers to Washington for a four-week institute in geography teaching. We funded two satellite summer geography institutes in College Station and in San Marcos, Texas this past summer. This year, we will bring more Texas teachers here for a similar training course, and no doubt, will fund other institutes in Texas as well.

Our Geography Education Program also involves the support of two pilot junior high school programs in Washington, D.C. and Los Angeles, California -- laboratories where we experiment with teaching materials and methods. In connection with another part of this program, we have published and distributed to secondary school students nationwide -- at no charge -- more than 6 1/2 million prepared maps.

We are also working today to create stimulating learning materials for students of geography. Our brightest children, familiar with personal computers and the moving image, are bored with traditional 1950s textbooks. We are committed to bringing stimulating technologies into our classrooms, that instill in our children a sense of wonder at the value and beauty of geography on our great planet. Through joint efforts with Apple Computers and Lucasfilm, we are developing innovative use of computers and optical technologies for the classroom. Our goal is to produce systems that can serve all teachers -- from locating examples from thousands of photographs, artwork, and motion picture films to custom building special lesson plans. We have already produced two interactive videodiscs which combine motion picture footage, stills, and text frames -- one on whales and one on the planets -- and there will be more of these discs in the near future.

The technology is there to spark the interest of our children in geography. Because we believe that the political, economic, and environmental future of our country and our world depends on a deeper understanding of our interdependence on this planet, we owe our young people no less than to equip them with the best possible tools we can devise.

To bring about the necessary improvements in geography education, we must still spread the message of why we need geography and how it can be taught throughout our society. Many teachers and educational advocates are aware of the crisis we face; we must now reach out to community leaders, parents, businesses, non-profit organizations, and policy-makers. The passage of the Congressional resolution designating November 15-21, 1987 as the first Geography Awareness Week has already provided this mission with substantial public attention. Events planned for that week will focus more attention on geography curricula than it has received for many years.

I would like to take this opportunity to thank the sponsors of this resolution, Senator Stafford, Senator Bradley, and Representative Panetta, for their efforts. For the record, I would like to insert the text of the resolution and the statements made by the supporters of this resolution. As these statements indicate, Congress is aware of our need for action, and that we must all pull together to reverse the decline we have witnessed in past years.

As you may know, the National Geographic Magazine published by our Society has 35 million readers in the United States, and the Society's television specials reach millions more. Through these and other efforts, we will remain committed to restoring geography to our curriculum, and to enabling American children to have geographic knowledge that is at the very least comparable to children in other developed countries. With the combined resources and efforts of the Society and the many supportive groups and interested organizations represented here today, I have no doubt that improvements can and will be made, simply because they must be made if our children are to compete in our ever-smaller world.

Our real challenge, however, is to move as quickly as possible. Every year that passes represents another year that our children fall behind. Recently, a 10th grader in California wrote a note to his teacher in which he said:

> I know this is a lot too late to be telling you. But I know nothing about maps. I mean absolutely nothing, not one thing. I don't know where the U.S. or L.A. is located...I don't know the difference between countries, cities, town's

> (sic) or states. Can I have a little of your help please?

That child is asking for our help. And if we do not accomplish great changes in the teaching of geography in the next decade, the students in kindergarten today will be echoing this plea when they, too, are fifteen years old and do not know where their own city and country are located on a map.

As the study of geography has made clear to its students, our environments constantly change, whether because a geological fault line is running through backyards in Southern California or inextricable ties now link our local and national economies to a complex global market. Let us make note of that lesson and insure that we promptly enable our children to be prepared to meet the demands of a better educated and increasingly competitive world.

Senator **Stafford**. That was not our bell that you heard?

Mr. **Grosvenor**. You mean my own people are out to get me? [Laughter.]

Senator **Stafford**. Well, thank you very much, Mr. Grosvenor. The next witness will be Mr. McNally. Mr. McNally.

Mr. **McNally**. Your witnesses have done so well on this subject that I am a little embarrassed to read my statement, but I have been redlining a little bit, too.

Senator **Stafford**. All right.

Mr. **McNally**. Much has been researched and documented, and written about "geographic illiteracy" of the people of the United States in the past several years.

Indeed, we have reached the ludicrous point where we now have stories appearing in the press all the time. For instance, one that has not been mentioned today so far is a credit card company turning down applicants from New Mexico because they think New Mexico is a foreign country.

While the daily news reports are full of stories of conflicts in the Middle East and Central America, the majority of our citizenry—even those really supposedly educated—would have trouble envisioning where they are on the map, and how their geography impacts the military and economic decisions that the President and the legislators must make.

Certainly that is a deplorable and a dangerous situation in a democracy. The thrust of Geography Awareness Week, however, should be less on deploring the situation than on developing workable remedies. The primary need is to restore the teaching of geography and map skills to their rightful place in the curricula, from the primary grades right through graduate school.

To accomplish this is no simple task, and I regret to say that it is not one that can be left to geographers. There is, I believe, a three-step process that is required.

First. Geography must be taught as a separate subject, just as English and mathematics are in the primary through middle-school levels.

The relationships between geography and other subjects should of course be explored, but geography should not be buried in the so-called mishmash of "blended social studies."

Second. Geography departments should be maintained at all colleges and universities, and every student should be required to take some minimum courses in the subject.

Third. University geography departments need to be reformed. Academic geographers have tended to be a dying breed in recent decades largely because of a narrow focus on considerations of tenure, publishing, and often arcane research and narrow technical concerns.

Geography does not need to be a boring subject. We need to reorient and revitalize geography departments so they will attract young people who have skills in communication and teaching and writing.

We need to train geographers who have the capacity to not just "know geography," but also, to effectively apply their knowledge in the classroom, business, and government.

We need the kind of graduate students who also have the capacity to become principals, deans and managers. We need to offer young people a career ladder in geography that does not mean being relegated to the backwaters of academic cloisters.

So, a new breed of geographers, new concepts in teaching geography, a recognition of the importance of the subject, and an insistence that it be an integral part of education of every American.

These would seem to be essential ingredients in remedying "geographic illiteracy." In the process, we can enrich the daily lives of our people and strengthen ourselves as a responsible world power.

Thank you.

[The prepared statement of Mr. McNally follows:]

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REMARKS BEFORE THE SENATE SUBCOMMITTEE ON EDUCATION, ARTS AND HUMANITIES

by Andrew McNally III

Much has been researched, documented, and written about the "geographic illiteracy" of the people of the United States in the past several years. From grade school through university levels, both geographers and the public at large have long suffered the consequences of a nation that knows little about the crucial political, economic, military, scientific, recreational, and other impacts of geography on our daily lives. Indeed, we have reached the ludicrous point where we now have stories of credit card companies turning down applicants from New Mexico because they think New Mexico is a foreign country.

While the daily news reports are full of stories of conflicts in the Middle East and Central America and the United States' involvement in those conflicts, the majority of our citizenry -- even those purportedly "educated" -- would have trouble envisioning where they are on the map or how their geography impacts the military and economic decisions that the President and legislators must make. Certainly that is a deplorable and dangerous situation in a democracy. But even those who shrug off a lack of knowledge about the world

(MORE)

may find their lack of map skills and knowledge of the geography of their own state and their own country is a hindrance in sensibly planning even a two-week vacation or making decisions about job and retirement opportunities.

The thrust of Geography Awareness week, however, should be less on deploring the situation than on developing workable remedies. The primary need is to restore the teaching of geography and map skills to their rightful place in the curricula from the primary grades through graduate school. To accomplish this is no simple task. And I regret to say that it is not one that can be left to geographers. There is, I believe, a four-step process that is required.

First, a multi-disciplined approach must be taken to develop a sensible, relevant, and useful curriculum in geography for both schools of education (to train teachers to effectively teach geography) and for the schools themselves.

Second, geography must be taught as a separate subject just as English and mathematics are in the primary through middle school levels. The relationships between geography and other subjects should, of course, be explored, but geography should not be buried in the so-called "blended social

(MORE)

studies."

Third, geography departments should be maintained at all colleges and universities and every student should be required to take some minimum courses in the subject.

Fourth, however, university geography departments need to be reformed. Academic geographers have tended to be a dying breed in recent decades largely because of a narrow focus on considerations of tenure, publishing, and often arcane research and narrow, technical concerns. Geography does not need to be a boring subject. We need to reorient and revitalize geography departments so they will attract young people who have skills in communication and teaching and writing. We need to train geographers who have the capacity to not just "know geography," but also to effectively apply their knowledge in the classroom, business, and government. We need the kind of graduate students who also have the capacity to become principals and deans and managers. We need to offer young people a career ladder in geography that doesn't mean being relegated to the backwaters of academic cloisters or too often being stuck at little more than entry-level positions in business and government.

(MORE)

A new breed of geographers, new concepts in teaching geography, a recognition of the importance of the subject, and an insistence that it be an integral part of the education of every American. These would seem to be essential ingredients in remedying "geographic illiteracy." In the process we can enrich the daily lives of our people and strengthen ourselves as a responsible world power.

(30)

Senator **Stafford**. Thank you very much, Mr. McNally.

At this point, if there is no objection we will place in the record a statement by Senator Paul Simon, who had hoped events would allow him to be here to introduce you, and to say a few words. He wants you to know he was anxious to be here but other events prevented him from doing so.

[The prepared statement of Senator Simon follows:]

STATEMENT OF SENATOR PAUL SIMON (D-IL)
OCTOBER 29, 1987
HEARING OF THE SENATE SUBCOMMITTEE ON EDUCATION, ARTS, AND HUMANITIES
"OVERSIGHT ON GEOGRAPHY EDUCATION"

Mr. Chairman, I would like to commend you for holding this hearing today at such an appropriate location--the National Geographic Society. The National Geographic Society has been active in geography education issues for several years now, and they have recently established a geography alliance at Illinois State University in my home state.

I would like to thank Senator Bradley for his leadership on this topic and I wish him well as he embarks on teaching his geography lesson in New Jersey during the first National Geography Awareness Week, the week of November 15.

I would also like to welcome Andrew McNally, III, Chairman of the Board of Rand McNally and Company in Skokie, Illinois. Rand McNally has been a recognizable signature in geography and map-making along with the National Geographic Society for many, many years.

Mr. Chairman, certainly as recent studies have pointed out, the children in our country need more comprehensive geography education, and I believe that this hearing will point out that need as well as bring forward some creative solutions to the problem. With this distinguished list of witnesses, I am certain that this will be the beginning of the momentum needed to move these ideas.

Once again, Mr. Chairman, I thank you for your efforts and I welcome our witnesses and thank them for testifying today.

Senator STAFFORD. The next witness will be Ms. Bell, and we would be glad to hear from you.

Ms. BELL. Thank you.

I appreciate the opportunity to discuss today why a greater emphasis on geography education is urgently needed in America's schools.

What we stated—the economic future of our country—will turn on bringing public education in line with the realities of the global marketplace, and I bring to your perspective today someone who, 15 years ago—I hope that does not date me too much—but taught children, 8-year-old children about tropical rain forests, and today, I slug it out in the global marketplace.

It means two things. First, Americans need the same base of skills and knowledge, including geography, that our international competitors use to a great effect.

Secondly, we must do business in a more expansive and synthesizing perspective, possible only when we can honor the world's enormous diversity.

Today, the twin issues of education and work-force quality I think remain among the top challenges faced by American business. What some call a gap, fast becoming a chasm between the typical level of employee capabilities, on the one hand, and what it takes to succeed in international business, on the other.

Based on the evidence, we could be headed for trouble. You have heard many of the grim reports this morning. I am not going to articulate all the statistics. But what is missing? A basic understanding of who fits where in this world, physically and culturally.

When I use the term, "geography," I like to use it in the term of broader sense. Understanding geography is understanding the full range of relationships among people—cultural, linguistic, historical, economic, religious, and spatial.

Right now, BellSouth is doing a large project in the French city of Metz, and the only way to understand Metz is to appreciate that for centuries, its location put it right in the middle of a tug-of-war between France and Germany, a struggle that redrew the map of Europe more than once, and dramatically influenced our own national history just a few decades ago.

From this core fact of physical location, there spins out an intricate web of historical knowledge, cultural insight, and human empathy, all the conditions that establish relationships and trust among people, which are absolutely essential for durable commercial ties.

In cultural awareness, Americans really lag far behind many of our competitors, but let me emphasis that our global opportunities far outweigh our problems. The only limiting force—our ability to take advantage of it.

Let me just point out, in the telecommunications industry—which is kind of what I know best—but very simply, China is a country that has been courted by many U.S. telecommunications companies.

When you go, you understand that Japan controls 70 percent of the telecommunications market in China. The Europeans 20 percent. Americans, a rousing 3 to 5 percent in that market.

To get America ready for the economy of the 21st Century, the center of our efforts absolutely must be the schools, to prepare young people to be citizens not only of their communities, not only of this country, more importantly, citizens of the world.

Like the National Geographic Society, BellSouth Corporation recognizes great opportunities for information technology to revolutionize education, including geography.

Indeed, this can emerge as probably one of the most important benefits of the new information-services industry. The combined technologies of telecommunications and the computer make it possible to put interactive educational resources right at the fingertips in the American home.

BellSouth is committed to promoting the full educational potential of our technology. However, it is more importantly the financial resources also.

One company's approach is creating a foundation with a corpus of about $25 million. This year we will distribute about $1.6 million for innovative educational reforms in the Southeastern United States.

Of course we have as a goal a more educated work force. More importantly, we are trying to strengthen the communities in which we live and in which we do business. This is our collective imperative, those of us in the private sector, the public sector, and the academic sector, in partnership. We must work together to encourage a sense of place—physical, cultural, historical and economic.

I think America's continued leadership depends on it, and, to paraphrase Thomas Jefferson, we cannot remain a nation both ignorant and free.

It is interesting, because that freedom does not necessarily have to be physical change. It can also be economic change. Thank you.

[The prepared statement of Ms. Bell follows:]

STATEMENT OF
MYLLE H. BELL
DIRECTOR - CORPORATE PLANNING

on behalf of
BELLSOUTH CORPORATION

before the
LABOR SUBCOMMITTEE ON
EDUCATION, ARTS AND HUMANITIES
of the
UNITED STATES SENATE

October 29, 1987

Mylle H. Bell
before the
U.S. Senate Labor Subcommittee
on Education, Arts and Humanities
October 29, 1987

My name is Mylle H. Bell, and I am director of corporate planning for BellSouth Corporation. I appreciate very much the Subcommittee's invitation to testify about why a greater emphasis on geography education is urgently needed in American schools.

I will focus on one main reason giving rise to this need -- the ability of U.S. companies to compete effectively in the world marketplace.

And, this testimony uses the term "geography" in the broad sense that Gilbert Grosvenor has so correctly emphasized. Understanding geography means understanding the full range of relationships among peoples . . . cultural, linguistic, historical, economic, as well as spatial. They are all vitally important, and they start with a grasp of physical place, and why it matters.

The perspective I bring has been shaped by key strategic issues that confront the great majority of high technology industries in the United States, especially within the information and communications sector.

More specifically, my viewpoint reflects BellSouth Corporation's emergence as a significant competitor in global telecommunications. What was once essentially a national industry now reaches around the world, and BellSouth is extending its reach, as well.

In addition to ranking among the largest telecommunications service providers in the United States, with a network that we believe is the most technologically advanced anywhere, BellSouth is rapidly expanding into new communication fields and far flung markets from China to Latin America to Europe.

Right now, the worldwide competitive posture of American technology companies reflects two conflicting facts of life: growing demand for the goods and services we could offer, contrasted with a domestic work force that needs an updated base of knowledge and skills for effective performance in a global economy. The gap is growing between the skills American companies need, and what American workers are equipped to do well.

BellSouth's strategic planners regard the work force quality issue as one of our most critical medium and long-term concerns. And we are not alone. Like many U.S. companies, we track the probable course of demographic and social trends into the next decade, and we foresee a serious shortage of employees with the capabilities that our business will require.

What specific skills do I mean? Not just the knack of manipulating technology. We will need thinking skills . . . or as our chairman, John Clendenin, has often said, "the ability to turn information into insight."

Last February a statement in the U.S. NEWS AND WORLD REPORT summed up the workplace of the future -- ". . . the demand will be for people who can think and create rather than perform mechanical tasks."

Thinking creatively and productively in a global economic environment starts with knowing basic geography, which means American business could be headed for serious trouble. We have seen the evidence . . . students who can not locate the U.S. on a globe . . . who do not know in which hemisphere Africa belongs . . . who think Atlanta is a state.

Today, many of the underlying problems of America's education system are receiving long overdue remedial attention and a new influx of resources. A number of state governments have initiated comprehensive reform programs. Speaking as a former school teacher, I encourage education policymakers and classroom teachers to design curricula that mirrors the reality of global economic and social interdependency.

A big part of what is now missing in American education is a fundamental understanding of who fits where in the world . . . physically and culturally. Without this first essential stepping stone, it is hard to go very far in pursuit of international commerce, no matter how good one's wares might be.

This is just as true in 1987 as it was in medieval times when the new technology of the printing press made popular an ancient work by the Greek astronomer Ptolemy, entitled GEOGRAPHY. This work fired the imagination of that day and helped ignite an explosion of systematic mapmaking, trade and exploration.

Ptolemy missed on a few matters of science, but the important point is that twelve hundred years after his own time, his insights and enthusiasm about the physical world led to a new age of discovery and expanded possibilities. It can be the same for us, as well, through a rediscovery of the discipline of geography.

Again, I am using the term "geography" in its broadest sense.

For example, BellSouth is involved in a substantial project in the French city of Metz. To understand Metz means, first of all, appreciating that its location put it right in the midst of a centuries-long tug of war -- literally -- between France and Germany. . . a struggle that redrew the map of Europe more than once and dramatically influenced our own national history only a few decades ago.

From this one core fact of physical location, there spins out an intricate web of historical knowledge, cultural insight and human empathy. . . the conditions that establish relationships of trust among people and create an environment for healthy and durable commercial ties.

The process of reaching this basic understanding is critical to international business success. Without it, establishing effective partnerships and penetrating overseas markets is virtually impossible. With it, on the other hand, some of the difficulties American companies now face internationally will begin to abate.

In profiling the knowledge and skills that American business will require in the future, I should emphasize that the need is not confined to the relatively small group who will live and travel and represent their American-based companies around the world. The same imperatives apply to the entire employee support team behind them . . . and to vendors and suppliers . . . and to their financiers, accountants and lawyers . . . and to legislators and regulators. That is why the education reforms must be pervasive.

Let me also emphasize that the opportunities ahead for American business are even greater than the challenges. The telecommunications industry is a case in point.

Rapid advances in communications technology and forces of the marketplace have transformed telecommunications into a truly international industry. The same technological momentum is vastly expanding the potential of telecommunications to promote economic development, with all its attendant benefits. Not only are American companies known for technical prowess, we are also respected as effective marketers. Now, we must add something new -- sensitivity to customers whose ways of doing business can be very different from ours.

When BellSouth entered the global telecommunications arena in 1985, I served as the first president of BellSouth International, the corporation's marketing arm for overseas operations. That first year, we co-sponsored the first-ever joint U.S.-China telecommunications conference, held in Beijing.

BellSouth and other U.S. telecommunications companies have been carefully courting opportunities in China ever since. But the Chinese do not move very fast. Relationships must be nurtured carefully over time . . . a frustrating process for hurry-up American business people.

It is no coincidence that right now, Japan controls about 70% of the telecommunications market in the People's Republic of China . . . despite a history of bitter and bloody relations between the two countries. Whatever happened in the past, today Japan understands the needs, desires and mores of the Chinese people and marketplace.

While American companies are learning a world full of how-to-do-business rules, we are in a catch-up mode with competitors from Japan, Germany, Great Britain and elsewhere who have been at it a lot longer. They are not only ahead of us in doing business with developing nations, they are making inroads in our own markets right here at home. They are wrapping their own home-grown quality in a package that satisfies the cultural values of American consumers.

These companies succeed in breaking into new markets because the thread of geographical and cultural understanding is woven into the whole fabric of their global enterprises.

Turning the situation around . . . learning to compete effectively . . . means meeting the challenge on the terms already established. Our international competitors have raised standards we must meet and exceed.

For government and business alike, the center of our efforts should be on the schools . . . on forging an education process that prepares young people to be citizens of the whole world as well as citizens of the United States and of their individual communities.

The National Geographic Society has led the way with its innovative pilot programs for geographic education, in collaboration with school systems across the country. In addition, the work the Society is doing with Apple Computers and Lucasfilms to apply computer technology to geography instruction holds enormous potential.

Like the National Geographic Society, BellSouth Corporation recognizes great opportunities for information technology to revolutionize education. This is one of the main benefits to be derived from the nascent information services industry. So far, we have hardly seen the tip of what information services can contribute to improving the way people live, work and learn.

For example, the combined technologies of telecommunications and the computer make it possible to extend the reach of interactive educational resources into homes and schools. So there is every possibility that some of these marvelous computer-based teaching tools the National

Geographic Society is helping to create can come right into the living room as well as the classroom, with the help of the telephone network.

BellSouth would like to play a greater role in the development and delivery of innovative educational material but the AT&T Consent Decree's information services band prohibits BellSouth from playing a more significant role. Until this arbitrary stricture is eliminated, BellSouth and similar technology companies will be unable to use their unique expertise to contribute fully to the education of our children -- and we will continue to fall behind Japan, France, Germany and Canada in bringing innovative information services to our homes and classrooms. The Consent Decree's restrictions force us to rely on yesterday's technology at a time when tomorrow's discoveries are critical to our educational and economic future.

Information technologies and geographical studies are being married in a number of other highly specialized ways. A wonderful example was published in NATIONAL GEOGRAPHIC last November -- a computer re-tracing of the first Columbus voyage. Every knowable factor was stirred into the computer . . . and the research team concluded that the Admiral's first landfall was at tiny Samana Cay rather than San Salvador as most historians thought. Taken together, human ingenuity and a free flow of information will produce unending fascination . . . which is the rich topsoil of education.

Like the Society, many American companies are aggressively promoting education reforms. So are public policymakers . . . from the local school board, to the state capitols, right up to the Congress. Our mutual challenge is to collaborate effectively so that these individual efforts -- in the private sector, the public sector, and the academic community -- will exert a larger collective impact than any of us could hope to have alone.

In this spirit, BellSouth stepped forward earlier this year with a major long-term commitment to work with Southeastern education establishments in the nine states where we provide basic telephone service. The BellSouth Foundation was established with the mission of identifying and funding imaginative programs to improve education at every level -- elementary, secondary, and collegiate. The initial corpus is $25 million, and the first round of grants was $1.6 million.

The Foundation is a direct and tangible way for BellSouth to intervene in an area of significant need. But our goal is greater than acquiring a future work force, important as that is. We are also seeking to strengthen the foundation of every community where we do business . . . to promote an educated citizenry able to cope with social and political challenges as well as economic needs.

Within such a community, a sense of place -- physical, cultural and historical -- will be more important than ever, because communities all over the world will be bound ever closer together.

Thank you very much.

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Senator STAFFORD. Thank you very much, indeed.

Our final witness from this panel will be Dr. Turner, who I understand has just come from a conference at Clark University in Worcester, Massachusetts on the "Earth as Transformed by Human Action." So, welcome, Doctor.

Dr. TURNER. Thank you, Mr. Chairman.

Yes, I have broken from that conference to come down today. This is a major conference on how society has transformed the Earth over the last 300 years and involves about 90 experts from 20 countries who have been gathered at Clark University for the entire week.

I want to use this project as an example of the kind of research that can be done with and through geography, because it is both unique and vital research, and exemplifies the teaching roles that geography can play. Please consult my written testimony for details.

Geography's perspective is unique among disciplines, one that not only involves specialization by subject matter, but holistic integration of subjects in their larger spatial and temporal context.

Geography's research is vital because of the range of significant conceptual and applied problems to the solution of which its expertise and perspectives are essential.

Let me provide some examples of the range of programs on going in the Graduate School of Geography, Clark University. We have a 5-year research program on the transformation of the biosphere, and funded studies on research management and regional development throughout the Third World, urban form as it affects housing, transportation and employment opportunities by gender, individual and institutional responses to both environmental and technological hazards, the regional and urban impacts of deindustrialization in America, and the relationship between water law and water use in the American Southwest.

The need for today's hearing, and for National Geography Awareness Week is unfortunate, but real. Only in the United States has the position of geography in the educational and research academy been questioned.

From the halls of Cambridge and Oxford, to field stations throughout the Third World, geography has been and remains a large and intrinsic part of the educational and research community.

Two of us in this room have spent the week with Yuri Badankov who is co-head of the Institute of Geography in the Soviet Academy. He has 600 geographers working with him.

That number probably constitute 50 percent of the geographers in the Ph.D. programs in the entire United States.

Why the American educational community has neglected geography cannot be resolved here. I believe, however, that its neglect in higher education and research is in no small way attributable to the decisions of the major Ivy League institutions to dissolve their Ph.D. programs during the 1950's, with the long-term effects on the educational community in general.

It is ironical that the position of the "United States Geographer" exists in our Government, but a geography program cannot be found at Harvard.

It is ironic that every major institution of higher learning and research in Europe has a major department of geography, but try to find one at Yale, Princeton, Stanford, or Michigan.

And it is ironic, that after abandoning geography, these major institutions of higher learning have found it necessary to create interdisciplinary programs, many of which mimic geography and, indeed, are typically housed in the geography programs of Europe and Asia.

Given these events, it is thoroughly understandable, but unfortunate, that advanced geographic teaching and research in America has to rely on Europe for so many of its practitioners.

Now there has been much discussion about the de-emphasized status of geography in elementary education. What that brings to the college level are students who do not know the "what of where."

I must admit that the situation in the higher academy, and in research is not much different. College graduate students are not adequately taught the concepts that explain the "why of where."

Perhaps the ultimate irony is that as the global community increasingly calls upon the use of geographic expertise and perspectives to help resolve many of the fundamental questions facing the relationships between nature and society, and between society and space, I believe America may be unprepared to take a leading role.

Thank you.

[The prepared statement of Dr. Turner follows:]

TESTIMONY OF B. L. TURNER II, DIRECTOR, GRADUATE SCHOOL OF GEOGRAPHY, CLARK UNIVERSITY TO THE UNITED STATES SENATE SUBCOMMITTEE ON EDUCATION, ARTS AND HUMANITIES, OVERSIGHT COMMITTEE ON GEOGRAPHY EDUCATION

To testify today, I have taken the morning off from a major research symposium now in session at Clark University, the subject of which is "The Earth as Transformed by Human Action." Sponsored by Clark's Graduate School of Geography, the International Institute of Applied Systems Analysis (Laxenburg, Austria), and the World Resources Institute (Washington, D.C.), this project involves about 90 experts from 20 countries who have gathered to attempt an initial stocktaking of the global changes in the biosphere over the last 300 years and to develop new frameworks for understanding the linkages between environmental change and society--the major agent of transformation.

The "Earth Transformed" project is exemplary of the unique and vital research and teaching roles that geography and geographers serve throughout the world. Geography's perspective is unique among disciplines--one that not only involves specialization by subject matter but holistic integration of subjects in their larger spatial and temporal contexts. Geography's research is vital because of the range of significant conceptual and applied problems to the solution of which its expertise and perspectives are essential.

I need look no further than the geography program at Clark to find a representative, although by no means exhaustive, array of such funded research. In addition to a five-year research program on the transformation of the biosphere, our studies include resource management and regional development thoughout the Third World, urban form as it affects housing, transportation, and employment opportunites by gender, individual and institutional responses to both environmental and technological hazards, the regional and urban impacts of deindustrialization in America, and the relationship between water law and water use in the American Southwest.

The "Earth Transformed" project in particular displays geography's holistic vision by promoting cooperation and dialogue among the very best experts from the sciences, social sciences, and humanities. This is necessary because an understanding of the relationships between nature and society is beyond the scope of any individual or topical focus. Holistic integration and cooperation, exemplified in the geographic approach, is needed if we are to cope succesfully with the pressing issues of the future of the biosphere.

The need for today's hearing and for a national Geography Awareness Week is unfortunate but real. Only in the United States has the position of geography in the educational and research academy been questioned. From the halls of Cambridge and Oxford, to the research laboratories of the Soviet Academy of Sciences, to the field stations of universities throughout Asia, Africa, and Latin America, geography has been and remains a large and intrinsic part of education and research at all levels throughout the world.

Why the American educational community has neglected geography cannot be resolved here. I believe, however, that its neglect in higher education and research is in no small way attributable to the decisions of the major Ivy League institutions to dissolve their Ph.D. programs during the 1950s, with long-term effects on the educational community in general.

It is ironic that the position of the "United States Geographer" exists in our government, but a geography program cannot be found at Harvard. It is ironic that every major institution of higher learning and research in Europe has a major department of geography, but try to find one at Yale, Princeton, Stanford, or Michigan. And, it is ironic that after abandoning geography, these major institutions of higher learning have found it necessary to create interdisciplinary programs, many of which mimic geography and indeed are typically housed in the geography programs of Europe and Asia. Given these events, it is thoroughly understandable, but unfortunate, that advanced geographic teaching and research in America has to rely upon Europe for so many of its practitioners.

The United States has de-emphasized basic geography in elementary and secondary education, producing graduates who are not taught well the facts of location: the "what of where." They sorely lack the most simple knowledge of the world in which they live, in which they make far-ranging decisions through their votes, and which they shall pass on to their childern. The situation in the academy of higher education and research is not much different; college graduates are not adequately taught the concepts that explain the "why of where." Perhaps the ultimate irony is that as the global community increasingly calls upon the use of geographic expertise and perspectives to help resolve many of the fundamental questions facing the relationships between nature and society and between society and space, America may be unprepared to take a leading role.

As we launch this new campaign to elevate awareness about geography, we must not forget that the status of the subject in primary and secondary education is intimately linked to its status in higher education and research. A reciprocal relationship exists between the two. For higher education to provide adequate numbers of well-trained teachers requires students who are geographically literate, and for primary and secondary education to produce such students requires well-trained geography instructors.

Senator **Stafford**. Thank you very much, Doctor, for a very good statement. In fact you all have done so well both as to content and brevity, that I think this panel will be given the Calvin Coolidge Award for the year. [Laughter.]

Senator Pell, do you have any questions?

Senator **Pell**. No questions.

Senator **Stafford**. All right. Mr. Grosvenor, the resolution designating National Geography Awareness Week was an important first step for Congress.

In your view, where should this Subcommittee now focus its attention?

Mr. **Grosvenor**. Well, I believe—and this may surprise you—that when Congress speaks the American people listen, and I think that it is important for Members of Congress to stand up and be counted as advocating geography education.

I believe that it really has to—the flame has to be kindled at the grassroots level, but we must have support, leadership, priority from topside, and that is Congress and the White House.

I am convinced that a major part of the problem in schools, at least as it relates to geography is attitude. Yes, they could use funding, everybody could use more Federal funding, but I have seen pockets of excellence in the public-school systems.

Audubon, which is an inner-city school in Los Angeles. They do not have any more money, or any less money than any other school, but they have a tremendous attitude.

I think we need parental support. I do not think that parents are really supporting their school systems as they should.

We need more public/private partnerships out there, where industry, educational institutions such as the Geographic, gets together and co-funds various programs, particularly teacher training.

Of course at the heart of all this is teachers. We must motivate our teachers. I do not think they feel that we take education very seriously in this country, and that is a serious flaw. We need to pay them better, we need to train them better, and we, at the Geographic, are convinced that teacher training in geography is an absolute key.

I think the Governor's Association has done an excellent job in convincing Governors that education should be a high priority.

Former Governors Alexander and Graham, and now Baliles, Clinton and Kain, they have taken outstanding positions in the area of education, and that I think will begin to pay off.

So it is basically attitude and leadership, as I see it, from Congress.

Senator **Stafford**. Thank you very much, sir.

Mr. McNally, do you see any single move that could be made in the elementary and high schools of this country that might foster greater interest in geography?

Mr. **McNally**. Well, I might sound self-serving—Mr. Grosvenor and me—but I think he would agree with me, that every student in our elementary and high schools should have an atlas that he can take home and call his own.

In the Western European countries, all the students have their own atlases. We have never done that in this educational system of ours.

Senator **Stafford**. Well, thank you, sir. You remind me that we apparently had a visitor in Vermont last summer who did not bring along any atlas, and he was traveling the old road up through the State toward Montpelier.

And if you have ever traveled that route, you go through a town called Randolph, at the north end of which there is a masonry bridge, and then the road divides in a "Y," each side of which appears like the other, and each has a sign pointing north saying "Montpelier."

I am told that this particular visitor crossed the bridge, saw the "Y," selected one of the "Ys," stopped at the first house where he could see anybody he could question, went over to an old Vermonter who was taking it easy on the front porch and said to the old Vermonter: "I see there are two roads to Montpelier. Does it make any difference which one I take?" And the reply he got was, "Not to me it don't." [Laughter.]

Miss Bell, in your testimony you mentioned that the United States is far behind Japan, France, Germany and Canada, in bringing innovative and educational information services to homes and classrooms.

Why has the United States, in your judgment, fallen so far behind in this area?

Ms. **Bell**. I think the basic reason is the emphasis on investment in developing innovative information services and delivery to the home. I think National Geographic has done wonders with their "kids' network" in the U.S.

However, let's take the example of the French Government. They have distributed home terminals. They can now deliver interactive educational services, social services, arts, cultural services, directly to the home at very little cost to the consumer.

So there is some innovative, I think, collaboration between the public and private sectors that could help us to use current technologies.

Senator **Stafford**. Thank you very much.

Dr. Turner, a United Nations' study has told us that students in other nations are more geographically literate than American students.

What happens in these classrooms in other countries that they have such superior results? How is geography taught in these countries that have superior results to ours?

Dr. **Turner**. Well, geography begins in grade one and follows all the way through college. I am not an expert on how it is taught in other countries, other than to say that it is highly emphasized. I must note the following; Clark University draws a large number of undergraduate students and graduate students from the European countries.

Whatever initial course work we have planned for the comparable American student, we have to exempt the European students from those courses because they are so much more advanced in geography than our students, most of whom come from top-caliber North American high schools.

Senator STAFFORD. Well, on behalf of the Subcommittee, I thank you all very much for joining us this morning, and helping us, and we do want to move ahead here, and your testimony will help us very much. So we thank you a great deal.

The final panel this morning will consist of Dr. Ronald Abler who is of the Geography Department, National Science Foundation here, in Washington, and professor at Pennsylvania State University; Mr. Steve Herman who is a geography teacher at the 7th trade level in Central School, Oroville, California; Magda Marshall, who is a junior in Edina High School, Edina, Minnesota; and Jeremy Gruenwald, who is a student in the 6th grade at Bells School in Turnersville, New Jersey.

I think Jeremy, you were especially greeted by your Senator earlier, who was my partner in the enterprise which has resulted in this hearing. So welcome. Please have seats.

I think you may have already heard us call attention to the green light and the red light, and we always apologize for putting a time limit on remarks because we know how far you have travelled and how hard you have worked to prepare to be here.

So, with no further ado, Dr. Abler, we will turn to you.

STATEMENTS OF DR. RONALD ABLER, GEOGRAPHY DEPARTMENT, NATIONAL SCIENCE FOUNDATION, WASHINGTON, DC AND PROFESSOR, PENNSYLVANIA STATE UNIVERSITY; STEVE HERMAN, GEOGRAPHY TEACHER (7TH GRADE), CENTRAL SCHOOL, OROVILLE, CA; MAGDA MARSHALL, JUNIOR, EDINA HIGH SCHOOL, EDINA, MN; JEREMY GRUENWALD, STUDENT (6TH GRADE), BELLS SCHOOL, TURNERSVILLE, NJ

Dr. ABLER. Mr. Chairman, and Members of the Subcommittee, thank you for the opportunity to testify today in my capacity as director of the geography and regional science program of the National Science Foundation, and as professor of geography at the Pennsylvania State University.

Geography, the discipline that studies the locations of things, and the great workings of the world, was a vital practical science when Americans were exploring and peopling this continent.

Geography was deemed an essential component of school and college curricula. Today, geography is an unknown country in the United States. Americans have lost their zest for the rest of the world, and in the process they have lost their appetites for geography as a discipline, especially in our elementary and secondary schools.

As a consequence, American university-level geography programs are superstructures without foundations. What we can do in the universities depends heavily on what happens in the elementary and secondary schools.

University geography programs in Great Britain and the Commonwealth, for example, draw from large pools of students who are taught some geography in the elementary and secondary schools.

No comparable pool exists in the United States, as Dr. Turner has suggested. A bright, energetic student who might be attracted to geography has that interest nourished in Great Britain and the

Commonwealth. A comparable student in the United States is all too often starved.

The results at the university level are striking. In Great Britain, geography has historically been the third-most popular major among students matriculating for first degrees.

In the United States, the percentage of students matriculating in geography last year was zero.

Geography does well despite that handicap. I take great pride in the students we attract. Our graduates compete well with those in other majors for jobs and awards.

But how much better might we do in the universities in educating Americans for today's global society, if the nation's students came to us with a solid foundation in geography, if they came to us with as much exposure to well-taught geography as they receive to English, mathematics, history and science?

The ideas and facts that are geography's stock in trade provide a perspective no society, especially the United States, can afford to ignore or neglect.

Those far-away places with strange-sounding names are no longer far away, the names become more familiar every day and every hour.

We now live in a world in which every place is connected to every other place. We now live in a world in which other nations take both the substance and the discipline of geography seriously.

They are ensuring that their citizens acquire sophisticated views of the larger world. Upwards of 30,000 people in the Soviet Union reportedly consider themselves to be geographers or full-time teachers of geography. The United States might have trouble fielding half that number.

America desperately needs the insights only sound instruction in geography can provide.

Mr. Chairman, America's geographers and geography teachers have the ideas, the talent, and the energy needed to make our children and young adults knowledgeable about the world in which they live, knowledgeable about how that world works.

America's geographers and geography teachers have the ideas, the talent, the energy, that are needed to produce citizens and officials who are capable of understanding and addressing the world's local, regional and global problems.

I can assure you that academic geographers stand ready and willing to help improve geography in our schools by whatever means are needed to accomplish that task.

We hope we can count on the support of public officials and policymakers at the Federal, State and local levels for a comprehensive attack on geographic ignorance.

We need your help to build sound elementary and secondary school foundations for our university superstructure. We need your help to translate our ideas, talents, and energies into plans and programs that will produce a geographically informed and geographically competent citizenry by the end of this century.

Thank you.

[The prepared statement of Dr. Abler follows:]

DR. RONALD F. ABLER
DIRECTOR, GEOGRAPHY AND REGIONAL SCIENCE PROGRAM
NATIONAL SCIENCE FOUNDATION
BEFORE THE
SUBCOMMITTEE ON EDUCATION, ARTS AND HUMANITIES
COMMITTEE ON LABOR AND HUMAN RESOURCES
U.S. SENATE
OCTOBER 29, 1987

Mr. Chairman, and Members of the Subcommittee, thank you for the opportunity to testify today in my capacity as Director of the Geography and Regional Science Program of the National Science Foundation and as a Professor of Geography at the Pennsylvania State University.

Without geography, we're nowhere. It is not accidental that we say that events take place. Everything is someplace, and the locations of places and things are serious economic, political, and emotional concerns. It matters where petroleum is and isn't. It matters that twenty miles separate the cliffs of Dover from the European continent; those twenty miles have profoundly affected the course of world geography and world history.

The locations of things give rise to the great workings of the world: the global currents of goods, energy, people, and information that are needed to satisfy human needs for sustenance, repose, creation, and recreation; currents that shift constantly as humanity resculpts the world's economic topography and devises new tools for overcoming distance.

Geography--the discipline that studies the locations of things and the great workings of the world--was a vital science when Americans were exploring and peopling this continent.

Policy makers and scholars supported geography generously and enthusiastically. Geography was deemed an essential component of school and college curricula. Today, geography is an unknown country in the United States. Long protected by our geography--by two oceans that isolated us and by benign neighbors to our north and south--Americans lost their zest for the rest of the world. In the process, they have lost their appetites for geography as a discipline at all levels of education from elementary school through post-graduate work.

As a consequence, American university-level geography programs are superstructures without foundations. Comparisons with other nations that take geography seriously are instructive. University geography programs in Britain and the Commonwealth nations, for example, draw from large pools of students who were taught sound geography in elementary and secondary school. No comparable pool exists in the United States. A bright, energetic student who might be attracted to geography has that interest nourished in Great Britain and the Commonwealth. A comparable student in the United States is too often starved. Brilliant American students never have a chance to consider geography. They are lost to other disciplines through lack of exposure.

The resulting numbers are telling. In Great Britain, geography is the third most popular major among students matriculating for first degrees. In the United States, the percentage of students matriculating in geography is zero.

The modal university geography major declares at the end of the second or beginning of the third year of study.

Geography does well despite such handicaps. I take great pride in how many students we attract. I take great pride in how well we do by those students. Our graduates compete well with those in other majors for jobs and awards. But how much better could the discipline do in educating Americans for today's world and for the global society of tomorrow if the nation's students received as much exposure to well-taught geography as they receive to English, mathematics, history, and science?

It is more important than ever that Americans understand physical boundaries in the world today. We now live in a world in which every place is connected to every other place. We now live in a world in which other nations take both the substance and the discipline of geography seriously; they are ensuring that their citizens acquire sophisticated views of the larger world. Upwards of 30,000 people in the Soviet Union reportedly consider themselves to be geographers or full-time teachers of geography. The United States would have trouble fielding half that number.

The facts and ideas that are geography's stock in trade provide a perspective no society--especially the United States--can afford to ignore or neglect. Yet many Americans regard geography as a subject that can either be ignored, or that can be mastered and practiced by amateurs.

Geographical ignorance among the public and among elementary, secondary, and college students is already having adverse effects. For example, recently an official of the U.S. State Department, who was engaged in planning U.S. geopolitical strategy in the North Pacific, did not know that Attu and Kiska (two small islands in the Aleutian chain) are U.S. territories.

Academic geographers stand ready and willing to help to improve geography in our schools and universities by whatever means are needed to accomplished that task. In collaboration with our sister societies we have formed the Geographic Education National Implementation Project (GENIP), a program to improve geographic education that is supported by the American Geographical Society, the National Council for Geographic Education, and the National Geographic Society in addition to the Association of American Geographers.

America needs the kinds of insights only sound instruction in geography can provide. America's geographers and geography teachers have the ideas, the talent, and the energy needed to make our children and young adults knowledgeable about the world in which they live. They have the ideas, talent, and energy that are needed to produce citizens and officials that are capable of understanding and addressing the world's local, regional, and global problems. We hope we can count on the support of public officials and policy makers at the federal, state, and local levels for a comprehensive attack on geographical ignorance to help us in translating those ideas, talents and energies into the programs and plans that will produce a geographically informed and geographically competent citizenry.

Senator STAFFORD. Thank you very much, Doctor.

The next witness will be Mr. Steve Herman. Mr. Herman, the floor is yours.

Mr. HERMAN. As an American I am embarrassed. It seems that almost everybody is getting into the act of pointing out our educational weaknesses.

Almost 30 percent of the undergraduate students recently surveyed at the University of Miami in Florida could not locate the Pacific Ocean on a base map of the world. Nine percent of these university students could not correctly locate Miami.

The Washington Post, earlier this month, reported that 20 percent of the American students who participated in a recent test identified Brazil as the United States on an outline map of the Western Hemisphere.

We live in a country that calls itself the "leader of the Free World," and yet apparently most of our citizens know very little about this world that we claim to lead.

It begins with basic place location. Geography is a tremendously broad discipline. A student of geography who is ignorant of place location is like a medical school student who knows nothing of basic human anatomy.

One cannot adequately approach the "why and how" of an issue if he or she is ignorant of the "where." This is inherent to the study of physiology, geology and history, as well as geography.

Geography, a discipline which embraces both the physical and social sciences, is commonly placed in the domain of social studies in American schools. There it becomes a second-class citizen, a supporting cast member in the social studies arena, one which sits idly by as history steals the show.

In most American schools, U.S. history is in fact taught over and over again. In California, for example, it is taught about every three years.

A required geography course is about as rare as the California condor.

The United States is my home. If I live in an actual home—three bedrooms, two baths and all—indeed I do want to know its history. Has it had termites? Has the roof had a history of leakage? What about the previous owner? Was he a Mafioso or a drug dealer?

Knowing the history of my house is important. There is no argument to that. But what about the geography of my house?

Could you imagine living in a home and not knowing the location and function of the various rooms? Not knowing what grows in your yard and where? Not knowing the type of carpet, paint and roofing you have? The spatial perspective is absolutely as important as the historical. In fact, they serve to complement one another.

Both history and geography merit study, and the dosages should be equal, as they are in most world nations. In Sweden, West Germany, and Japan, to name a few examples, geography is taught in tandem with history virtually every single year of a child's schooling.

Geography is considered a fundamental subject in those countries. For some reason, we, in America, have developed this misguided belief that history is social studies. Geography in America is simply an appendage of history. How can that be?

If history is important because of what it tells us about our time on this planet, shouldn't geography be of equal importance because of what it tells us about our space? The world is leaving us behind.

Teaching about past events and places that students know almost nothing about is ineffective. Who cares about Roman history, if he, or she, knows nothing about Rome's location and function today?

If we really want students to appreciate world and U.S. history, then we had better give at least equal time to U.S. and world geography, and it would be most effective if the geography came first, laying out that foundation for historical study of an area.

The egalitarian approach to world social studies is the approach we use at Central Intermediate School in Oroville, where I teach, and it works.

Geography is a vital, vibrant subject. It lends itself well to the development of critical thinking skills. How can it snow atop mountains at the equator? Why do so many Latin Americans risk life and limb to enter the United States?

These are the kinds of questions one hears in a competently taught geography class.

Sadly, well-trained geography teachers are even rarer than geography courses in America's schools. The States have created this problem.

In California, for example, candidates with a degree in geography are not eligible for a secondary teaching credential unless they have another degree in a "teachable subject."

This of course, serves the desires of the State Department of Education, whose social studies framework is basically a history framework, with only passing mention of geography after the third grade year.

Clearly, the discipline of geography has been treated poorly by the "powers that be" in American education. We need to stop cheating our young people in this country.

How can we expect to do business with other countries and maintain diplomacy with them, if most of us do not know anything about them?

Our history is indeed important, but how can we expect our young people to appreciate their history when they simply cannot relate to where any of it took place?

Geography has been an integral part of the educational menu in most countries for years. When will America's children get their shot at a balanced diet?

Thank you.

[The prepared statement of Mr. Herman follows:]

Steven R. Herman
Central School
2795 Yard Street
Oroville, CA 95965

October 20, 1987

United States Senate
Committee on Labor and Human Resources
Senate Subcommittee on Education, Arts and Humanities
Washington, D.C. 20510

To the Distinguished Members of the Senate Subcommittee on Education, Arts and Humanities:

I am a seventh-grade geography teacher who will be testifying at the oversight hearing on geography education scheduled for October 29, 1987, at the National Geographic Society headquarters. I am submitting this written testimony to supplement my oral presentation. Thank you for giving me this opportunity.

Almost thirty percent of the undergraduate students recently surveyed at the University of Miami in Florida could not locate the Pacific Ocean on a base map of the world. Nine percent could not even locate Miami!

A study conducted in 1984 by geographers at the University of North Carolina discovered that among the 1,900 students surveyed at eight North Carolina universities, only twelve percent could name the five Great Lakes. Only 33% of those students surveyed could successfully name the states that border North Carolina--the home state of nearly all who participated. Less than 25% of these college students could name a single African country lying between the Sahara Desert and the Republic of South Africa.

Many people, including many geographers, laugh off such surveys and their results as insignificant trivia. The argument goes that geography is much more than knowing the locations of lakes and countries.

I agree that geography is a tremendously broad discipline, but I would argue that a student of geography who is ignorant of place location is like a medical school student who knows nothing of basic human anatomy. One cannot adequately approach the "why" and "how" of an issue if he/she is ignorant of the "where." This is inherent to the study of physiology, geology, and history--as well as geography.

Surveys of American university students such as the ones undertaken in Florida and North Carolina elucidate a serious flaw in our country's public school curricula. At present, geography is not an integral facet of the academic program in most public schools in the United States. Consequently, our high schools end up handing out diplomas to millions of "geographic illiterates" every June.

We live in a representative democracy. Every day our representatives make critical decisions regarding land use, sending troops to a foreign country, sending food to the Sahel or Thailand, or providing technical assistance to Bolivia or China. American voters are expected to elect leaders whose views best reflect their own in regards to what is best for our country. A large part of our government's dealings involve foreign affairs. Each of us needs to be aware of what is going on in other parts of the world (and where those places are) in order to elect representatives who will be able to make the proper decisions. Apparently, the average American, circa 1987, is quite unaware of what goes on in the rest of the world. How qualified is the average American to make critical decisions such as whether or not to send aid to "contra-revolutionaries" in Nicaragua? Our nation's spatial ignorance stands to get us in a lot of trouble (in the case of Vietnam, some might argue, it already has). Can we afford to continue downplaying the role geography deserves in America's schools?

Many educators point out that geography is already a part of most school programs since it is a theme which appears frequently in most history textbooks. Maps of the Roman Empire and Mesopotamia appear in most world history books, and a good American history text almost always has simple maps of the United States' growth through time.

Many historians complain that there is just no room for any geography courses in the curriculum. As with geography, there have been many surveys and tests which indicate that many students lack basic knowledge of U.S. and world history. "If anything," some historians might argue, "we need more history classes."

I would argue that many students score poorly on standardized history tests and various surveys of historical knowledge because they see little relevance between the past in distant places and the present in the areas they know well. It is difficult for most young people to relate Rome in 59 B.C. to their home town circa 1987. The difference in time is radical as is the spatial difference: Rome is half a world away.

In my seventh-grade geography class, I encounter problems of perceived irrelevance just as often as my counterparts in history class. Fortunately, I have the tools of the geographer at hand--as well as the necessary training. When my seventh-graders are introduced to Rome, they are instructed to use the thematic maps in the atlas (maps of climate, vegetation, farm products, and the like) and then list the "themes" common to both Italy and California. The students find similarities in nearly all geographical themes in this particular scenario, but even if the similarities were few, we would still have a good starting point for the study of Rome. We have some background knowledge and we have encountered some relevance.

The history teacher could also begin with this type of atlas activity, but few do. Most history teachers are given very little time to teach a great deal of historical material. There simply isn't the time--and in some cases there may be a lack of geographical expertise--to explore in depth the spatial setting of a place of historical significance. If students were offered a world geography class before tackling world history, the history teacher's job would be much easier and the learning would be more effective. I teach at a school that has such a balanced program. The students benefit. They will relate better to historical settings and should retain more of what they learn.

Some would argue that a good history course includes a goodly portion of geographic teaching, and I agree with that postulate. However, I feel strongly that geography should not be approached as simply an appendage of history. History is important because of what it tells us about our time on this planet. Then shouldn't geography be given equal importance because of what it tells us about our space? In most countries the answer to that question is a resounding "Yes!" Geography is an integral part of school curricula in Japan, West Germany, the Soviet Union, and most other developed countries. When will America catch up?

Students at all levels like geography, if it is taught well. Geography is inherently tangible and relevant. It can also be fascinating. A good geography teacher--one who has experienced some of the world and knows how to organize and utilize slide discussions, map exercises, group activities, and guest speakers as teaching tools--can generate tremendous enthusiasm from his/her students.

Geography has an advantage over many other subjects in that there are so many modes by which it can be explored. Students with weak verbal skills, for example, can still "tune in" to geography by viewing slides, videos, and films or by "putting their all" into map exercises and cartographic games. It is rewarding to watch a 12-year-old who has always been turned off to school due to poor reading ability suddenly become enthusiastic and inquisitive while watching slides of urban China or the Amazon rainforest. Teachers of geography may be the initiators who turn many "slow learners" on to school. I see this happening to some degree at Central Intermediate School (where I teach) right now.

Geography is a vital, vibrant subject. It is capable of captivating and motivating most any student. A good

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geography teacher with a solid geographical background refers often to personal experiences and also utilizes audio-visual aids to add depth and color to his/her lessons. Geography, by its very nature, lends itself well to the development of critical thinking skills: "How can it snow atop mountains at the equator?" "Why do so many Latin Americans risk life and limb to enter the United States?" "Is it fair to expect the owners of coal-burning industrial plants to pay large amounts of money to 'clean up' their operation under the assumption that they contribute to the incidence of acid rain?" These are the types of questions that one hears in a geography class with a competently trained geography instructor.

Sadly, well-trained geography instructors are even rarer than geography courses in America's schools. In some states a teaching credential with an emphasis in geography is not even available.

In nearly all schools geography lies in the domain of social studies. In most cases, the social studies teacher has a background in history; very few have had much training in geography. In the case of California, the state has assured a preponderance of history-oriented social studies teachers by offering single subject teaching credentials to teaching candidates with degrees in history (or "government"). Candidates with degrees in geography are not eligible for a California teaching credential unless they have a second degree in a "teachable subject." Of course, this serves the desires of the State Department of Education, whose social studies framework is basically a "history framework"--with geography only receiving passing attention after the third grade year.

Clearly the discipline of geography has been treated poorly by the powers that be in American education. We need to stop cheating our young people in this country. How can we expect to do business with other countries and maintain diplomacy with them if most of us don't know anything about them? Our history is, indeed, important. But how can we expect our young people to appreciate their history when they simply cannot relate to where any of it took place? Geography has been an integral part of the "educational menu" in most countries for years. When will America's children get their shot at a balanced diet?

Thank you so much for your interest and for letting me participate in this process.

Sincerely yours,

Steven R. Herman

Senator **Stafford**. Thank you very much, Mr. Herman, and now, Ms. Marshall, I understand you are a junior from Edina High School in Edina, Minnesota. The floor is yours.

Ms. **Marshall**. I would like to begin by giving thanks to Senator Stafford and President Grosvenor for giving me the honor of participating in this Senate hearing on the importance of geography awareness.

Two years ago I was a 9th grade student in a pilot class which the National Geographic Society sponsored at Audubon Junior High School in Los Angeles, California.

At that time, I became aware that there were an astonishing number of individuals who could not distinguish between the United States and Brazil on a world map. How could this happen?

The cause of this geography illiteracy must be that our own educational system has placed geography at the bottom of its priority list.

Many individuals believe that English and mathematics are the most important subjects, but they also should include geography on this list.

To achieve this, we will have to change the way people think about geography. What is geography? Geography is not only the efficient reading of a map. It does not stop with latitude or longitude.

Geography also includes the study of land, of human life, and human activity. By understanding the relationships between people and the land, I feel that geography can bring the world to students.

We cannot always travel to gain knowledge and understanding of other cultures and events taking place in distant locations.

How, then, can we expect students to relate to world events? My experience as a geography student has shown me that geography can be an invaluable tool for unlocking the door to this understanding.

I was born in the Republic of Panama. In Panama, students are taught geography as a part of their basic education.

Even though I left Panama when I was 12 years old, I can still remember begin taught continents and how they are attached as early as when I was taught my ABC's.

It was then surprising to me to find out that students in the United States could not recognize the shape of their own country.

How, then, can we bring about a change in the teaching of geography in America? Geography should be part of every history class. From my own experience two years ago, I realized that geography had enormous value in my understanding of events in history.

For example, in Napoleon's military campaign in 1812, he attempted to expand the French empire eastward as far as Moscow. But he was not a good geographer, because if he had launched his campaign in the fall, he would not have been defeated by "General Winter" and European history would have taken a different turn.

Another example relates to the Aztecs and their civilization. What I remember from earlier studies of the Aztecs is not dates or names, but rather, a geographic decision that they made locating their capital city on an island in the middle of a deep-water lake connected to the mainland only by a long and narrow bridge. Thus the city was easily protected from invasion.

These are two examples of how world history was enriched for me by an understanding of geography.

Schools should also use the community as a classroom. Students can take field walks around school neighborhoods, interview members of the community, and study the health of local shopping centers.

Then it will no longer be "just a neighborhood" that they walk through to get to school every day. It will become a place with its own unique personality and its own particular geography.

To conclude, geography is not a quick study of maps. It is more than just the location of a place on a map. It is a link between people, cultures and events.

I have been invited here today to testify on my views on geography education. I hope that my remarks have helped to broaden your awareness of what geography is and why we must get geography back into American's classrooms.

Senator **STAFFORD**. Thank you very much, Magda Marshall. Now we will be glad to hear from Jeremy Gruenwald. You are representing the 6th grade here, I understand.

Mr. **GRUENWALD**. Thank you. My essay that I read at my school is here now.

Geography is something we could not live without. I have been to many places in my life: Iceland, England, New York, Massachusetts, Alabama, Florida, New Jersey, and here.

When you think about it, I know more about geography than anything else. I have seen how ships and airplanes navigate, climbed volcanoes, seen crater lakes, been inside castles, and seen how other people live and used to live.

How people live and what other places are like is not all that geography is, though. How can we learn about places if we cannot even get to them?

Also, there are mountains, rivers, lakes and canyons we would not know about without geography.

What about current events? The peace talks going on can prevent a devastating war.

Cars, airplanes, ships, spacecraft are also part of geography. So are compasses, maps and globes. Add onto that continents, countries, States, counties, towns, even individual homes. What about Government? Government is a part of geography.

All these things are priceless to the human race. Geography is much more important than people think. Our lives depend on it.

Senator **STAFFORD**. Thank you very much, Jeremy, for a very good statement. And now we have a question or two.

Dr. Abler, what activities are being conducted by the geographic and regional science program under the National Science Foundation?

Dr. **ABLER**. Senator, our primary mandate is to fund advanced research in geography and instructional activities are handled by a different directorate in the Foundation, the directorate for science and engineering education.

The one thing that I have been doing with our program is putting as many people overseas for their doctoral dissertation research as possible.

I think we desperately need more experts on the workings of the geography of overseas areas.

Senator **Stafford**. Thank you very much. Let me just offer a word of appreciation, since I serve on the Committee which is involved in a lot of environmental and other issues, and we are not scientists and frequently have to ask the National Science Foundation and the National Academy of Sciences for their evaluation of situations and testimony that we receive, because we feel we get a very fair, unbiased evaluation from both the Foundation and the Academy of Sciences.

Dr. **Abler**. I am glad to hear that. Thank you.

Senator **Stafford**. Mr. Herman, I agree with Dr. Grosvenor, that teachers are the key to increasing geography awareness in this country. What has inspired you most in teaching geography, and how can we get other teachers excited about it?

Mr. **Herman**. I teach in a school where we have students of all different levels. That is standard in the public schools of America.

The beauty of geography is that I can take a student who, for example, does not have really strong verbal skills and turn them on to maps, turn them on to slides of my trip to China or my trip to Peru, or turn them on to discussions about various issues. It is fantastic to take a student that has this background of being a "D" and "F" type student, bring them into my geography class, and find them turned on to the world.

Geography is such a relevant subject. It is such a tragedy that we have left it out of the schools. It is locally relevant and internationally relevant, too. It is frustrating.

Senator **Stafford**. Thank you very much.

And now to Miss Marshall and Mr. Gruenwald: how do you think teachers can get their students as interested in geography generally as you both appear to be?

Miss Marshall, do you want to answer that first?

Ms. **Marshall**. The way that I got interested in geography was that my teacher, Mrs. Salter had us research any topic that we wanted as long as it was related to geography.

I did the Aztec, and the only thing that stands out in my mind is what they decided to do with their city, and if many teachers could just make students look up whatever they want, as long as it is related to geography, and have them present it to their own classmates, that would help them learn, and it would help their classmates learn, and it will also bring a lot of interest.

Senator **Stafford**. Thank you. Jeremy?

Mr. **Gruenwald**. For me, my interest in geography really was not from my teachers. It was mainly from being to all these places. My father was a military lawyer and so we have been transferred to many places, and I have had a chance to actually learn, close-up, all about this.

But for teachers to help children enjoy geography more, they could use it—well, like what she said—have them choose what they want to do, learn about that as much as they can, and show what they have learned.

Not just say you have to do this, and this is the subject we are going to do, and that is it. There is no question about it. [Laughter.]

Senator **Stafford**. Which service is your father in?

Mr. GRUENWALD. Now he works for the Government at DPCS in Philadelphia.

Senator STAFFORD. Which military service was he in?

Mr. GRUENWALD. The Air Force.

Senator STAFFORD. The Air Force.

All right. Well, on behalf of the Committee I want to express our appreciation to all of you.

[Additional material supplied for the record follows:]

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DAVID PIERPONT GARDNER
President

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BERKELEY, CALIFORNIA 94720
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November 3, 1987

Ms. Liz Hackett
Assistant to Senator Stafford
Education Subcommittee--Minority Leader
428 Dirksen Senate Office Building
Washington, D.C. 20510

Dear Ms. Hackett:

In follow-up to our telephone conversation regarding the Education Subcommittee hearing on the importance of geography in education, enclosed is a copy of an article by President David P. Gardner on "Geography in the School Curriculum" which appeared in Annals of the Association of American Geographers. President Gardner has been informed that this article will be submitted as part of the record of the hearing.

If I may be of further assistance to you, please feel free to call.

Sincerely,

Nancy Nakayama

Nancy Fujita Nakayama
Executive Secretary
to the President

Enclosure

The Annals of the Association of American Geographers
Volume 76, Number 1,
March 1986

Geography and Educational Reform

Editor's Note: Ever since the National Commission on Excellence in Education released its report, *A Nation at Risk* (1983), educators have been challenged to reshape the nature and the quality of precollegiate education in the United States. The dearth of geography in the precollegiate curriculum is legendary, as is the geographic ignorance of American students (and their parents). Because the current wave of educational reform holds great potential for needed change, I invited several educators to reflect on the role that geographers can play in shaping new school curricula. As the chair of the committee that sparked the current debate on educational reform in America and as an individual with a background in geography, David Pierpont Gardner is exceptionally well qualified to assess the place of geography in the context of overall reform. Christopher Salter describes the successful work he has spearheaded in making geography an integral part of the high school curriculum in California, and John Wolforth provides a comparative perspective by reviewing the place of geography in Canadian schools, where, in some provinces, geography has established a strong presence in recent decades.

Geography in the School Curriculum

David Pierpont Gardner

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Abstract. The current national interest in educational reform, quickened by a series of reports on schooling during the past few years, has given us the first opportunity in a generation for real and fundamental reform in our schools. We should take advantage of this opportunity to improve the teaching of geography, especially in light of evidence suggesting that the proportion of seventh through twelfth graders enrolled in geography classes has dropped in recent years and that the academic preparation of many geography teachers in those grades could be strengthened. A number of encouraging new experiments are underway at the state and national levels. These experiments reflect a cooperative approach to the problems of the schools—including the problems of teaching geography—and involve higher education, business, and professional societies. Geography has a particularly important role to play in teaching the next generation about the nations of the Pacific Rim, which are an increasingly powerful economic, cultural, and political force in world affairs. More generally, this is a time of extraordinary opportunity for geographers to promote and advance the essential perspective geography brings to our schools.

Key Words: geographic education, educational reform, Pacific Rim.

IN 1981, Secretary of Education T. H. Bell created the National Commission on Excellence in Education and asked me to serve as its chairman. Our charge was to "assess the quality of education in our nation's public and private schools, and to make a report to the American people." From that moment—which brought together the Commission's 18 representatives from teaching, industry, government, the foundation world, and private life—until now, much of my life has been a mosaic of responses, reflections, and recommendations on schooling in America. This, however, is the first opportunity I have been given to bring a message directly to geographers in the context of current educational reform.

In the 18 months that our Commission studied American education, we heard from several hundred witnesses—parents and teachers, school administrators and board members, researchers and students, business and civic leaders. We gathered information by holding public hearings and symposia throughout the country, as well as by promoting and reviewing research on all aspects of education in the United States. As a Commission we met a number of times to ponder this information, discuss its meaning, debate our options, and prepare our

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report (National Commission on Excellence in Education 1983). Consider some of our findings:

- Some 23 million Americans are functionally illiterate by the simplest tests of everyday reading, writing, and comprehension. About 13 percent of all 17 year olds in the U.S. can be considered functionally illiterate. Functional illiteracy among minority youth may be as high as 40 percent (p. 8).
- The amount of homework for high school seniors has decreased (two-thirds report less than an hour a night), and grades have risen as average student achievement has been declining (p. 18).
- Secondary school curricula have been homogenized, diluted, and diffused to the point that they no longer have a central purpose. In effect, we have a cafeteria-style curriculum in which the appetizers and desserts can easily be mistaken for the main course. Students have migrated from vocational and college preparatory programs to "general track" courses in large numbers. The proportion of students taking a general program of study has increased from 12 percent in 1967 to 42 percent in 1979 (p. 19).
- This curricular smorgasbord, combined with extensive student choice, explains a great deal about where we find ourselves today. We offer intermediate algebra, but only 31 percent of our recent high school graduates complete it; we offer French 1, but only 13 percent complete it; and we offer geography, but only 16 percent complete it. Calculus is available in schools enrolling about 60 percent of all students, but only 6 percent of all students take it (p. 20).

Given the nature of our findings, we decided to write the report as an open letter to the American people, to increase the chances of its being noticed rather than remaining unread by the very people who ought to be alarmed about its message. The fact that nearly all 50 states have since established state-level task forces, examining the nature and needs of their specific educational systems, is a sign of the impact not only of the Commission's report, but also of the many other studies that reached similar conclusions. The interest of *Annals of the Association of American Geographers* in the teaching of geography in the schools is a further indication of the scope and reach of the changes that are now shaping American secondary education.

The remarkable public response to the 1983 education reports—there are more than six million copies of our Commission's report in print alone—has given us the first national opportunity in a generation to bring about real and fundamental reform in our schools. We cannot count on another chance for some time—probably not for another generation at least. We should take advantage of that opportunity to improve the teaching of all disciplines, including the discipline of geography.

And all the evidence points to an urgent need to act. In 1960–61, only 14 percent of America's 7–12 graders were enrolled in geography courses. This was a lower percentage than had been standard for years. By the mid-1970s, however, the figure had dropped to 9 percent. This development means that children not only lose instruction in basic place name geography but also are denied the potential for creative approaches to spatial skills, an understanding of the earth, its resources, and the broad patterns of cultural distinction across regions.

Drawing on 1982 data, we find that of the some five thousand teachers who teach geography in grades 7–12, 20–30 percent had taken no classes in geography when they were in college; 30 percent had minored in geography; 10 percent had majored in geography, and the remainder had taken only one or two courses. Thus, not only is a smaller percentage of the precollegiate population being exposed to this subject, but those who teach it today are less familiar with the subject than one might hope. Clearly, there is a real need for geographers to become concerned about and involved in this matter.

I bring this up for two reasons: On the one hand, I was a student who saw the significance of geography early on and committed undergraduate time to its study. When I graduated from Brigham Young University in 1955, I had a triple major—Geography, Political Science, and History. To my mind, there are very logical connections among these three fields. All human events involve an intersection of time and place, and the geographic dimension fixes the place for social intercourse among peoples, and between humans and their environment. Such understanding is essential in determining the motives, the dynamics, and the costs of much human activity. Our educational system should be profoundly concerned with conveying that understanding to the young.

There is, however, an additional, even more basic reason why it is important to promote the presence of geography in the American classroom. Historically, we have been a nation pushing outward, seeking new frontiers, dedicated to the exploration of new lands to accommodate our growth and settlement. In the frontier era, geography was a welcome subject because it provided some sense of the world "out there" and gave us information that helped to determine our approaches to the productive use of new lands. As the frontier filled in, however, we became more settled in our view of both ourselves and our world. This change seems to have diminished our capacity to look outward, to see the open horizon, and to be curious about lands beyond our own borders. Geography has always been a rich discipline in its capacity to unfold the wonders of other cultures, other settlement patterns, and other attitudes toward the environment and the earth and its resources.

Children born in the desert lands of Nevada, or the small coves of West Virginia, or even the canyons of Manhattan have been able to look beyond their local worlds as they study the people and places of distant nations and regions. This comprehension of distinct and sometimes vividly divergent ways of life provides children with a wonderful vision of the world and their place in it. It is not only a vision of life lived differently; it is a vision that leads to a better understanding of one's own way of life. To study another place, another society, another people is always to explore one's own universe through contrast and comparison.

For both these reasons—the deepening of students' grasp of the world's complexity and the broadening of vision that geographic studies encourage—I welcome the energetic efforts of geographers to strengthen this educational resource in American classrooms. Activities to improve the teaching of geography in the schools have a statewide, a national, and an international focus. Let me begin at the state level with an example from California.

One of the most promising efforts to emerge from the educational reform movement has been the involvement of higher education, businesses, and professional societies in this endeavor. Cooperation between secondary and postsecondary educators is especially rich in possibilities because schools and colleges already influence each other in a variety of formal and informal ways. For a number of reasons, however, the once-cooperative relationship between secondary and postsecondary education has unraveled some, the victim of many different kinds of stresses and strains on both higher education and the schools. Today, fortunately, we are seeing a burgeoning effort to establish partnerships between the two in the interests of improving education in the schools.

In California an alliance has been established among teachers from the schools, community college instructors, educational administrators, and college and university faculty. The aim of this California Geographic Alliance is simple: to improve the teaching of geography in the schools. And for the junior and senior high school teachers who have given six or seven hours to 150 students during a normal day, the chance to step onto a university campus for a program that treats them as equals in the struggle to improve education provides spark and renewal. For the university professor who runs the risk of losing touch with the often exhausting—and always demanding—responsibilities of colleagues in the schools, the interaction with high school teachers is a source of fresh perspectives and new ideas. While geography is the focus of the California group described here, the organizational structure could be adopted in virtually all fields. It is an idea worth trying on other campuses and in other schools.

Business and professional organizations are also making important contributions. Many cities now have "Adopt-a-School" programs in which a local company assists a local school: chemists and physicists from a research and development firm, for example, volunteer their services to teach science to gifted students as a way of complementing the efforts of regular teachers. Many chambers of commerce, statewide business roundtables, and local businesses are working to promote corporate contributions to education, encouraging their employees to become involved with the schools, and supporting legislative and budget proposals for reform in education. The point is that everyone in our society has a stake in education, and everyone can help.

The National Geographic Society is one such organization that is committed to improving the teaching of geography. To do so, the Society is establishing pilot projects in Washington, D.C. and Los Angeles schools, will be running a Summer Geography Institute in Washington, and will be developing and distributing teaching materials from the Society's valuable educational resources. In this effort the Society will be working closely with the California Geographic

Alliance. While the National Geographic Society is particularly well equipped to promote geographic education, other corporate groups could support educators to bring change, new optimism, and improvement to our schools as well.

One of the special strengths of geography is its capacity not only to educate a student about the location of foreign places, but also to teach about the physical and cultural environment of such places. As a nation, we stand in need of lessons on the geography of the Pacific Rim, for we are entering into what has been called the Pacific Century.

Since 1978 the U.S. has shipped more goods across the Pacific than across the Atlantic. Asia buys one-third of our grain exports, nearly one-fifth of our machinery exports, a quarter of our chemical exports, almost a third of our civilian aircraft exports, and more than half of the lumber we send abroad. The dollar total of our current trade with Japan is greater than American exports to France, West Germany, and Italy combined. Japan, in fact, is the largest American export market outside of Canada. The port of Los Angeles now exceeds the Port Authority of New York/New Jersey in terms of net income; in a few years the annual tonnage shipped through the Los Angeles and Long Beach harbors is expected to outstrip New York as well. The geography of our trade has obviously shifted enormously.

If we look beyond trade, and turn again to the classroom and educational reform, we move from the mercantile to the social context of the Pacific Century. The U.S. is experiencing a wave of immigration that rivals that of the turn of the century, and California is receiving some 30 percent of those immigrants—a proportion far in excess of the state's 10 percent of the nation's population. The majority of these newcomers arrive from Pacific Rim countries—Mexico, Central and South America, and Asia. Roughly half of California's population growth during the 1970s was due primarily to this pattern of immigration.

Circumstances have combined to offer California special opportunities and special responsibilities. By virtue of its geography, its economy, its history, its character, and its wealth, California is fitted to play a pivotal role in what will surely be one of the greatest centers of trade, commerce, and cultural exchange the world has ever known. Geographers can assist our schools in bringing this news not only to students in California classrooms, but also to youth in schoolrooms all over America, for this shift in our trade and patterns of cultural infusion will have an impact on the entire American landscape and society.

Set goals as you promote the expansion of geographic education in the American scene. Have as one of your ambitions the inclusion of geographic units on the Pacific Rim so that we can assure ourselves that our next generation has not come through school thinking that the spatial, economic, and cultural patterns of the past are necessarily going to repeat themselves in the future. With the force of geography, you can play a productive role in making students realize that the world has a history of continual shift and flux, mapping new patterns of trade activity, migrations and cultural influence as nations and regions of the world wax and wane in development and significance.

This is a time of extraordinary opportunity for educators who wish to bring their curricula, classrooms, and mission into productive alignment. In virtually every state, commissions are working on curriculum revision, new graduation requirements, and consideration of a core of academically demanding and rewarding courses. It is fitting that geography and geographers play a role in this far-reaching reform effort.

This discipline has a significant and essential perspective to bring to our schools, but that perspective will not make its way into our curriculum unless geographers are willing to promote and advance its presence. The partnership among teachers from all levels in the California Geographic Alliance, and between the Alliance and the National Geographic Society, provides an effective and productive model for the cooperation essential to achieve educational reform. I am pleased that the Alliance has taken root and grown on a campus of the University of California, and I see the activity begun here as being readily transplanted to any campus and community in which there are geographers who care about their schools, their students, and the presence of their discipline in the American schoolroom.

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'YOU CAN'T GET THERE FROM HERE' WITH TODAY'S APPROACH TO GEOGRAPHY

by Andrew McNally III

Much has been researched, documented, and written about the "geographic illiteracy" of the people of the United States in the past several years. I don't need to belabor that subject for an audience of professional geographers. Nor do I need to dwell on the baleful consequences of the decline of geography teaching. From grade school through university levels, both geographers and the public at large have long suffered the consequences of a nation that knows little about the crucial political, economic, military, scientific, recreational, and other impacts of geography on our daily lives. Indeed, we've reached the ludicrous point where we now have stories of credit card companies turning down applicants from New Mexico because they think New Mexico is a foreign country.

The reasons often given for the decline of geography teaching are varied. They all have some validity. However, they tend to miss the crucial issues that geographers can continue to ignore only at their peril.

The decline of geography as a discipline began, some suspect, with the introduction of blended social studies at the grade school and junior high levels in the 1950s. Of course, that answer tends to beg the question of why were the social studies blended in the first place, and why was geography so quickly lost from the blend?

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Besides, Americans were woefully undereducated in geography long before the 1950s. If anything, having just come out of World War II and embarking on an era of unprecedented international involvement, travel, space exploration, satellite technology, etc., the past 40 years should have been a period ripe for exploitation with a growing -- rather than declining -- interest in geography.

"Well, OK, but" -- so another rationale goes -- "America is an isolated continent and people so free of direct entanglement with other cultures don't feel the need to have the grasp of world geography in the way that students in other countries have. It's the same reason Americans are not as multilingual as people in many other countries."

That argument doesn't quite wash, either. For one thing, studies have shown that Americans are as ignorant of the geography of their own country or their own state as they are of the rest of the world. Languages are probably taught more widely than ever, yet geography and map skills are something that we can all use in day-to-day living in a way that is impossible for many who study languages. It is odd, therefore, that geography is the discipline that we may reasonably fear will eventually disappear completely from curricula at all levels. Even the once prestigious and renowned department of geography at the University of Chicago seems to be fading from the scene.

"Geography is too tough a subject. American students are lazy."

Maybe. But I seem to see students doing things in computer science, mathematics, and other disciplines that are no more important and no less rigorous. Other disciplines may not be as widely studied as we would like. But they aren't disappearing, either.

I suspect, however, that a large part of the blame for the diminution of geographical studies, must be placed on the shoulders of professional geographers. Or as the comic strip's Pogo once said, "We have met the enemy and they are us."

As an example, I would like to point with approval at the efforts of the NCGE, the AAG, and more recently, the Geographic Education National Implementation Project (GENIP). Materials developed and disseminated by these organizations are making a significant contribution towards developing an understanding of fundamental geographical concepts. Rand McNally is proud to help underwrite the most recent efforts of GENIP.

What concerns me is that these materials may still be missing one root of the problem. That is: How should geography be taught?

An experience of some years back may serve as an illuminating anecdote.

Isobel Lawrence, respected author of colorful, accurate, historical books for children, was at the public library in Rand McNally's hometown of Skokie, Illinois, for a National Library Week celebration sponsored by Rand McNally in the 1960's. Also at the library was Dr. Carl Mapes, Rand McNally's distinguished Senior Geographer at the time. Dr. Mapes was lecturing a group of fourth graders about geography and the space program, using the motorized, 6 ft. diameter Rand McNally GeoPhysical Globe as an attention-riveting prop.

"That globe is beautiful!" Isobel exclaimed. "It's so exciting. But why is he being so dull (referring to Dr. Mapes' pedantic presentation)? He's boring the socks off those kids."

At that point, Isobel launched into a dozen sound ideas of how she would make the GeoPhysical Globe come alive and relate to the interests of those fourth graders. Isobel, by the way, having written a book on Colonial Williamsburg for children of the same age, was dressed in a costume typical of the Colonial Williamsburg era. In this and other ways, she made history "come alive" for her audience as well as her readers without sacrificing accuracy or diluting her subject.

Looking back, I think maybe Isobel may have put her finger on, if not the problem with geography teaching, at least a central problem.

Beginning at the elementary grade level, students do have interests that should make them receptive to appropriate education in geography. They want to get from their house to a friend's house or the shopping mall. They go on vacations. They have relatives in distant cities, states, and countries. They are fascinated by satellites and space shuttles. They worry about nuclear warfare and inter-continental ballistic missiles and gasoline for their cars. They like rock-and-roll groups from England, Macadamia nuts from Hawaii, automobiles from Japan, and computers from everywhere.

In short, there is a critical geographical component to many of their interests. They will study and understand geography if it is related to those interests in the way that an Isobel Lawrence could do it, and if it can be shown to have some use and meaning in their lives and careers.

Yet, to take just one example, out of the millions of American students of all ages fascinated by satellites and space shuttles, I dare bet than not one out of 10 could explain the geographical basis for the orbital pattern of a satellite or why the space shuttle may take off from Florida and land in California.

It is intuitively obvious, moreover, that appropriate kinds of geographical studies have a great deal of interest for a wide, popular audience. A commercial example of which Rand McNally is quite proud is our "Places Rated Series," which has sparked the public imagination and provided launching pads for alert geographers who want to debate their approaches or refine their conclusions. From Places Rated Almanac, dealing with quality of life factors related to place, to others in the series on retirement, sports, and vacations, they represent applied geography that is colorful, controversial, and widely helpful. Considering the public's demonstrated geographical malaise, it is amazing that the 63-year-old *Rand McNally Road Atlas* continues every year to be the best selling paperback annual published in the United States.

Geography, as a discipline, needs to capitalize on other such opportunities for "real world" examples of skills and research applications. We need to be a scythe that cuts both ways, on the leading edge of science and in the involvement of the general public, pursuing research and disseminating information. The "Applied Geography" conferences are, for example, a step in the right direction but have not gone nearly far enough to meet the need.

One of the fundamental concepts of modern business is being "market-driven." That means that if you want to be successful in marketing a product or service to people, your best chance is to pay attention to what those people want and need rather than trying to force them to accept what you like or what you think they *should* want.

My sense of outrage and despair over the decline of geography departments in universities is tempered by the realization that if there is no "market" for what geographers offer, there is no justification for geography departments to exist. But the market *is* there. We just have to learn to adapt the product to fit the needs of the marketplace.

We can point our fingers all we like at low budgets, difficult students, boards of education, parents, deans, faculty committees, and a host of other reasons for the decline of geography as a discipline. We may even be right that these are contributing factors. Solving those problems, however, can at least be made easier if we also reform ourselves.

Whether through the NCGE, the AAG, GENIP, or another body there now should be a focus on research and testing of teaching techniques in imparting geographic and map skills and how to make geography relevant at all levels of education. It is not enough to call for more money, more support for geography in the curriculum, etc. There is going to be little enthusiasm for those kinds of reforms so long as geography teaching is not molded to attract the attention of the general student population.

It seems to me there needs to be a simultaneous, three-pronged attack on this general problem.

1. Academic geographers should lead the way in putting more emphasis on teaching and recruiting undergraduates to graduate-level geography programs.

For the past few decades most university geography departments have suffered from a "tenure syndrome" that has promoted research and "publication counts" at the expense of teaching skills and graduate programs at the expense of undergraduate programs. The result is an academic system that is responsive to the momentary needs of the individual or department, but not to the long-term needs of the profession or the population. Furthermore, those potential geography students who do have teaching talents tend to get the discouraging message that their talents are unnecessary and unwanted.

If a university department's continued existence depends upon the demand created through a supply of undergraduate applicants, then it is frustrating to see teaching and recruiting undergraduates with a variety of skills so widely ignored.

2. Geography majors need to be trained in how to teach their subject to the undergraduates who follow them and, thereby, how to communicate their subject and its importance to others as well. All education students should be required to take basic courses in geography, but they also need to be taught how to pass this information along to their students in a lively, meaningful, and relevant way.
3. At grade school through high school levels, techniques need to be developed for teaching geography in a relevant and effective manner. Proficiency tests and standards of achievement in basic geographic principles, map skills, and geographic information also need to be developed and integrated into the social studies curriculum.

Not only is it going to help eradicate geographic illiteracy among the general population, it is also going to be far easier to attract geography majors at the college level if the subject can be more effectively presented throughout the elementary to high school grades.

Perhaps computers could help revolutionize the teaching of geography. An imaginative programmer could take the GENIP curriculum standards as content guidelines for creating educational game software that could make learning geography and map skills challenging and fun. It won't work, however, if all we do is transfer the dullest kind of pedantry to a computer disk.

Moreover, computers are coming to play an increasingly dramatic role in map making and other aspects of applied geography. This is helping to open up new careers for geographers in business, government, and academia. Computerized learning tools could serve the dual purpose of familiarizing their students with a basic tool of their profession as they learn their subject.

Failing some such effort to bring geography back into the mainstream of education, geographers and map makers alike will have missed the golden opportunity our era offers to show that our "products" are excitingly relevant to people's daily lives, needs, and interests. Conversely, the public's current sensitivity to the problems generated by geographic illiteracy (termed "the assault on dumbness" in a recent New York Times article) provides us with a golden opportunity to solve this problem while establishing geography as a prominent component of every citizen's life process.

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Andrew McNally III is Chairman of the Board of Rand McNally & Company and the great grandson of the 131-year-old company's co-founder, Andrew McNally. His 56-year career with the company began as a production worker in one of the company's plants in 1931 after his graduation from Yale. He was elected a vice president in 1945, president in 1948, and chairman in 1974. Mr. McNally is a past president of the Geographical Society of Chicago, a fellow of the Royal Geographical Society, and a former councillor of the American Geographic Society.

Senator **Stafford**. I will say that when I was in school I thought geography was quite a fascinating subject, and I can still remember some of the pictures in the geography book I had when I was in about the 5th grade. So I am distressed that it has fallen behind so in recent times, and we will try to do something about it from our perspective.

Thank you all very much, indeed. Thank you all for being here, and this Committee stands adjourned.

[Whereupon, at 12:00 noon the Subcommittee was adjourned, subject to the call of the Chair.]

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